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VOLUME 32 MAY 1947 NUMBER 5

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THE LOST ARROW By Rolf Pundt

Sierra Club Bulletin

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Climbing the Lost Arrow

By ANTON NELSON

MANY a hardy hiker, having viewed with awe and fascination the leaping waters at the top of Yosemite Falls, walks on up the trail to near-by Yosemite Point to look at Yosemite Valley's majestic panorama. As he gazes about in reverent appreciation, his eye is attracted to an upsoaring block of granite out in the space where logic suggests nothing could possibly stand. Yet there below the rim a little, poised in impassive solitude, is the top of a mighty pinnacle. Carefully moving to a better vantage point, he sees the sleek shaft drop away toward the swirling mists of the falls. Twitches of respect and fear well from his stomach and, stepping back, he declares, "Now there is a spire no man can possibly climb!"

This is the Lost Arrow, lost indeed to a world of creatures who live in the horizontal dimensions. In recent years, however, rock-climbers of the Sierra Club, driven by high spirits and aided by piton, carabiner, and rope, eagerly sought the more vertical routes up the inviting cliffs and spires of Yosemite. They began to wonder even about the Lost Arrow, the most challenging spire of all and, according to some, the last difficult unclimbed summit in America. In the early 'thirties, David R. Brower and George Rockwood surveyed a possible route from the base. Brower returned in May, 1937, with Richard M. Leonard. They started up the polished trough at the west side, their aim to reach the narrow, vertical chimney, 800 feet high, that cut in behind the shaft. At the chimney's upper terminus was the notch separating the last 200 feet of the shaft from the cliff.

After twelve hours of delicate and strenuous work, Brower swung out onto the first noticeable ledge 350 feet from their starting point, the two men alternately having placed 40 pitons for protection or direct aid. It was still 200 feet to the entrance to the chimney. In "A Climber's Guide to Yosemite Valley," they described the prospect from the base in all simplicity, "The route from here is terrifyingly clear." The first ledge was dubbed First Error. Another was the Second Error. The notch became Third Error and the summit suggested that it would be the Last Error of any climber brash enough to attempt to reach it.

Four more attempts by the persistent trio of Jack Arnold, Robin Hansen, and Fritz Lippmann followed the same route. They even entered the great chimney. The polished granite holds became increasingly scarcer; the angle verged sharply toward 90 degrees; the sun's direct rays turned the walls into an oven, and lassitude sapped the will. The route above would require days of continuous climbing if, indeed, it was possible to go any higher at all. The Lost Arrow waited in noble serenity, an incomparable prize, the winning of which made any method honorable.

An alternative method of getting onto the spire had been suggested by an Indian legend. Bestor Robinson attempted to lasso the summit from the near-by rim, but it wasn't near enough by. Brower, with Rolf Pundt belaying, climbed down from the valley rim to a point level with the notch, but a blank wall some fifty feet wide separated him from it. Then in 1946 two new climbers, John Salathé and I, turned our minds to the problem.

One day in August, Salathé arrived on the scene ready to join two others in a new attempt from the rim. Through a misunderstanding the others did not arrive. Undaunted, Salathé decided to try out a system of solo climbing worked out by Italian alpinists. This he had practiced on local climbs in the Bay area. He descended on one rope and, by making an intermediate traverse across the face of the cliff, was able to rig a second rope which dangled to the notch itself. Some two hundred twenty feet below the rim he minutely surveyed the beetling upper shaft of the spire. It was incredibly flawless and holdless. The only place left on which to move was a narrowing ledge running out to a corner of the east face and overhanging talus 1,000 feet or more below. It was like stepping out the window from the hundredth floor of the Empire State Building onto a window ledge. He edged out to the end of the ledge. There, in the corner, a slight crack ran upward a few feet. He must see what lay beyond its terminus. Placing pitons he had manufactured especially for the smallest cracks, Salathé ran his climbing rope through carabiners hooked in several pitons and passed it about his own body again. He could now belay himself in case one of his

pitons jerked out. Patiently he tried to pound pitons into the almost inadequate crack. Most climbers would not even have attempted to do so. At last twenty feet was won.

Rising high above his last piton where the crack ended he could just reach one of those strange solution pockets which climbers sometimes thankfully find in the most necessary places. It looked to Salathé like an "eagle's nest," and was just big enough to wedge his body into. Holdless granite above necessitated drilling holes for two expansion bolts. Then he could reach a loose crack beyond, which offered enough help to bring him to a resting place.

In forgetful absorption, such as only a climber can know, oblivious to time and danger, he worked his way upward, inch by inch. He passed an overhanging spot where the rock was rotten, stepped onto a granite flake, thin as a board but attached to the main mass several feet below. Then, testing each piton, and using several together when one alone was not strong enough to hold his weight, he passed another overhang on rotten granite, his anchor pitons ten feet below. A second ledge appeared on the face above, and Salathé built a cairn upon it to prove that the apparently unbroken walls could be climbed. He was sitting hundreds of feet higher than anyone had ever before climbed on the Lost Arrow. It was only 100 feet farther to the top.

Now, however, as he rested after the furious concentration of his efforts, Salathé realized the peril of his solitary endeavor and wisely returned to the notch. Using Prusik slings he ascended once more to the safety of the rim. Deciding that further solo climbing was indiscreet, he enlisted John Thune as a partner and on the following week returned with him to the outer ledge. He worked slowly upward all day, with patient assistance from Thune. By swinging from one slight crack to the next, he was able to gain perhaps 90 feet to the end of the last crack. A ranger a mile away marveled at the sight revealed through his telescope.

This was the situation as evening fell: In the fading light, Thune, out of sight 90 feet below, called that Salathé must come down, for the end of the rope was at hand. Having drilled a hole for a bolt, Salathé answered that he would just look over the bulge of rock above.

And in the last light of day he looked—up onto the smoothly polished angle of the monolithic tip of the Arrow, a surface which tapered to the summit 30 feet away. The remaining interval could not be covered without some drastic kind of artificial aid. It was high time to retreat. They did.

Now it must be admitted that competition is the essence of sport and the spur to thought. When Fritz Lippmann and Jack Arnold heard of these

astonishing successes they decided something ought to be done to finish the task. Robin Hansen and "Ax" Nelson were hurriedly consulted. A new idea was born, and, on Labor Day week end, a route to the top of the Lost Arrow was devised and climbed....

It is Saturday morning. Hansen and I have joined Lippmann and Arnold at base camp in the now dry and silent bed of Yosemite Creek above the falls. Finishing breakfast, we gaily march up the swells of granite to the rim. The Arrow's cold response to our welcome is sobering. As the first breezes of the day swirl up the cliffs we make ready to try out our new idea. It is this: From the brow of the cliff just west of Yosemite Point it is but 100 feet or so laterally to the top of the Arrow, which stands somewhat below the level of the valley rim. If a light line can be cast over the top and down the far side, and then reached by climbing around to it, heavier ropes that would support a man may possibly be pulled over and anchored. Then the last unclimbable pitch can be surmounted by climbing up the rope itself, and a unique and spectacular means of returning to the rim can be rigged—an aerial traverse.

All day Saturday we take turns at casting and throwing lines and ropes weighted with lead sinkers. First short of the target, again onto a two-foot level space on the summit, then to one side of it, fall the leaders. Then, swinging into the cliff beneath, they catch in fissures, and the line breaks when we pull. Hundreds of feet of line are thus lost. The ever-present updraft capriciously foils nearly successful casts. Some even land on top, but fail to drag the rope on over, or slide off sideways. Late in the day the skill and luck of Hansen increase until we know he has the range. Again and again Bob lets "just one more last try" sail out with a snaking of rope behind. Then suddenly one cast settles over the correct place and slithers over without sliding off. With gleeful shouts we run down the rim to where we can see the guide line hovering over the outer ledge. At camp we sit around the fire and eat a watermelon brought along for a treat. We sleep light-heartedly as if tomorrow would bring an ordinary day's work.

Sunday morning is frosty. We must split the team. Who will go down onto the Arrow itself and climb out to the valley side to reach the guide line? Who will take the responsibility of staying on the rim to supervise the engineering of our complex rope system? We all look at each other and sense the decision. Jack and I will climb. We heft our hammers and carefully select what we need from our copious and varied supply of hardware and ropes. An hour later Jack and I stand at Third Error, the notch, contemplating our formidable adversary.

The day's climb is much like Salathé's, except that it is filled with successive unexpected difficulties, each of which almost stops us. The route is obvious and inevitable.

A buzzard circles patiently in the sky viewed between our feet.

The first pitch turns out to be as difficult as any we have ever seen. Direct mechanical aid is 90 per cent of the task, and we devoutly wish our pitons were as good as Salathé's, which have wide, short blades and hair-thin points. Moreover, we would like it if the previous climbers had not largely ruined the barely usable crack when they hammered out their pitons. But we must use what we have. As we further diminish the crack's possibilities it becomes doubtful that many others will ever climb the Lost Arrow. After 15 feet of tediously trying to place sound pitons Jack drills a hole for an expansion bolt, but is still unable to reach the immediate objective, the "eagle's nest." He comes down to rest.

I take up the lead directly into the sun. The day is half over. I must make full use of my extra-long reach or lose precious time placing another bolt. By placing my left foot in a short loop from the bolt and pressing my arms and body close against the wall, I can rise in delicate balance on one foot. My right foot and finger tips search for any helpful rugosities in the rock. At full length I stretch up and place two fingers of my right hand over the lower lip of the eagle's nest. Pulling up on one hand and then placing the other on top of it for added strength calls up all my glandular resources. With a sudden pouring of sweat I squirm into the shallow and narrow hole and wedge my knees and one arm and elbow. Swiftly I search for the needed security of another hold.

A tiny hole which once received a piton to aid previous climbers proves now to be damaged and unusable. The angle is too steep to balance on, the rock too smooth for my finger tips or nails to dig into.

My judgment tells me I will need the rest of my strength to get back down safely. Then, ten inches from my face I see a small, round hole and jam a little finger tip into it. A "thank God hold," if ever there was one! It turns out to be a hole drilled by Salathé, for whose help I am grateful. Then more trouble. My bolt fits the hole only loosely. However, I can put just enough weight on this slight aid to free my hands for drilling another hole. The unnatural strains start leg muscles quivering uncontrollably. I screw in the bolt twenty minutes later. My temples pounding and clothing soaked with sweat, I am lowered from it as from a pulley by Jack. Our troubles are only beginning as Jack resumes the lead. It has taken us eight hours to cover the fifty feet to the first ledge.

The route to the second ledge is not a route at all. It looks like sheer

folly, for the wall is overhanging, the granite rotten. We must hold a council of war. Communication with Fritz and Bob is another problem. The distance engenders confusing echoes from the opposing walls and the rush of the wind buffets our voices into gibberish. If it were earlier in the year and the falls were roaring, nothing would be audible between us. Nevertheless, we reach the understanding that our five nylon ropes will not suffice for the job we have planned for them even if Jack and I do reach the guide line. Fritz and Bob must go down for more. Leaving a fixed rope, we return to the notch and hollow out two level holes in the broken rock in which to sleep. Our sleeping bags and food, even a primus stove, are lowered to us.

As the sun sets, the peaks of the High Sierra are illumined with the day's last lovely smile. Hot soup and tea round out a royal meal for such an airy dining room. Time, which seemed to race through the day, now seems to stand motionless in this never-never world of the perpendicular whose creatures we have become. A magic silence we are reluctant to break fills the world between our dark cleft and the purple sky. The battlements of Yosemite loom about us in all the mystic presence of a hundred centuries. Our reverie is startlingly broken as a furry, mouselike creature scurries past and scampers straight up the cliff, his claws scratching the tiny flakes of granite as confidently as if he were on a level table top. Through our rock picture frame we see the campfires flickering in the valley below our feet. The Glacier Point firefall makes for us a display such as few men will ever see. There is nothing to do but regain strength for the completion of our task. We sleep.

For Bob and Fritz it is far different. With each hour the responsibility for success rests more heavily upon them. They run down through the twilight to the valley, covering the four miles in half an hour, and set out to hunt for nylon ropes. They spend all evening tracking them down, and it is late as they slowly mount the way again with leaden feet.

Labor day comes cloudily. Will the good weather continue? A thunderstorm can ruin our chances and imperil retreat. We ascend the fixed rope and go to work in deadly earnest. First Jack attempts to pass the rotten overhang. Then I try. It seems as though Salathé and Thune used the last poor piton cracks for the last time. Without piton aid we cannot hold onto the rock, which pushes us outward. The whole trip is at stake. However, two men, for whom we have the greatest of respect by now, have gone ahead; we must, also. Anything is fair now.

An idea! Yes, it is worth trying. We weight an end of rope. Twenty-five feet above our ledge is an outjutting horn of rock. After many awkward casts our rope settles over the horn and does just what we did not want it

to do: it wedges tightly! To climb it now would be sheer folly, for if it pulled out a fatal fall might drag us both down. Then we look around the overhang and discover that we can just reach the other end of the rope from our highest piton. We tie onto that end and make it fast. We both hang on the ropes and jerk them to see if the horn is solid; it seems to be.

I look at Jack, who is furiously puffing a cigarette. The stern code of the climber decrees that the lightest man shall lead doubtful pitches. Our fans atop the cliff cannot see what we are doing and to them the maneuver appears incredible as Jack, apparently climbing on nothing, mounts the fixed rope on Prusik knots. To me, braced below for a fall, he appears to be climbing right into the sun. The rotten overhang passed, we easily move to the second ledge where, after swaying in the winds for 40 hours, our guide line miraculously awaits us.

At the rim end of the guide line Bob selects the best spots to anchor one of the nylon ropes and belay with the other. The nylon in 850 feet of half-inch rope would fashion thousands of stockings, but to us it is more precious than that. It provides reliable support under tensions which may approach 3000 pounds. In case of a heavy fall its elastic property offers additional cushioning.

Time is now our greatest opponent. In the stillness of the noon air we four discuss and determine the exact method of executing the coming maneuvers. To the upper end of our light guide line is attached a heavier rope, and to that two strands of nylon, each three rope-lengths long. Double bowline knots that will neither slip nor seriously reduce the rope's effective strength unite the individual ropes. At last comes the order to pull. Jack and I comply. Every time a knot reaches the summit it catches and must be see-sawed back and forth with anxious care lest it slip off sideways. Bob maneuvers from side to side to keep it running over the exact center of the Arrow tip.

The nylons arrive at our ledge. Bob anchors his end of one. Three hundred feet of nylon stretches exasperatingly, so Jack and I pull it down tight before looping it about a large block of rock. This stretches the rope some 20 feet. We now have a new route by which to overcome the final unclimbable summit rock.

To the left the slight cracks of the Salathé route run upward; we are glad we are not called upon to follow them. Twelve hundred feet directly beneath lies the base of the Arrow. Nerve tension mounts; we can not be entirely certain that our rope will stay on the top as we climb it. Jack smokes three cigarettes in succession. "Well, now or never," he smiles. He loops the second nylon rope from above about his waist for an upper belay

to Bob. Another forms a lower belay to me, anchored on the ledge to pitons. We shout to Fritz that we are ready. Bob takes up his slack.

Jack begins the ascent, standing in slings wrapped around the fixed rope by Prusik knots which hold fast when weight is applied but can be slipped upward when weight is removed. My neck kinks as I watch Jack lead on and on straight up into the blue sky where little white clouds casually drift over the curious scene. If only Jack could find a crack for a piton it would improve by several times the usefulness of my belay by serving as a pulley point. After 50 feet he finds a good one. Twenty feet higher he finds another and a third. A fall would not hurt very much now. Nearing the summit pitch, Jack finds it indeed unclimbable, save by our method. He is 100 feet above me and his slight figure, wind blowing his hair and jacket, passes from sight.

Twenty feet to go. The angle tapers somewhat. Anticipation is unbearable. The most serious threat to success grows greater; although we could bring Jack down successfully, the chances are that he may pull the rope off to one side as he comes over the lip of the summit and before it gets him to the top. Ten feet to go. At 4:30 P.M. a man crawls safely onto the top of the Lost Arrow for the first time.

Cheers arise from friends who have come up to see the finish, and our own jubilant yodels resound from Columbia Cliffs, half a mile to the west. Jack's stature is dwarfed by the gigantic size of the great pinnacle. Although several men could stand erect on its sloping top, the exposure so near on every side justifies a prone position. He examines the top closely and reports that two slight protuberances have kept our ropes from sliding off. A slight crack is found also, and Jack anchors himself to it with a piton. Lest they fall and imperil retreat he anchors also his two belay ropes before untying them from his body. Then he unites them to form an upper belay running from the men on the rim over the summit and down to me and starts drilling a three-quarter-inch hole for an anchor bolt.

As the sun sinks low I place all our gear in my rucksack and tie to it one end of a 120-foot loose rope whose other end I tie about my waist, so we can pull the rucksack up later. Fritz relays my "up rope!" to Bob. In half an hour I join Jack on top. The sun is setting. Time, if ever it was, now is of the essence. I take over the drilling and Jack goes into conference with Bob and Fritz. A landing ledge on the home cliff about 60 feet horizontally from the summit is our goal for the return. A pine tree 90 feet above affords an anchorage at the proper angle. The ropes are shifted to this new point for the next phase of our adventure, the aerial traverse. I begin another hole to divide the strain of the double fixed ropes.

At one point the belay rope from the rim slips from Jack's grasp as he is handling it and, swinging across to the cliff, it wedges tightly in a fissure. This may complicate the whole venture. Will Jack and I have to lash ourselves to the pinnacle to spend the night shivering? "Pull," we yell despairingly to Fritz and Bob. The rope only wedges more tightly, then with a jerk it comes free. Our pulses beat more slowly as we haul it over on the fixed ropes. Our wonderfully good fortune has not deserted us.

We can now hardly see in the dusk. But the quarter moon peers through some clouds and casts an eerie light. Our return route lies over a black, forbidding abyss. We tighten the eyes of our anchor bolts. Both of us grasp the fixed ropes tightly as we remove them from the piton anchor, thread them through the two eyes, and join them again. Will the bolts, with two inches of granite holding them, be strong enough? Bob and Fritz strain them to the utmost. They seem reliable.

Jack, the lighter man, will again go first. The span on the ropes is nearly 150 feet between anchors. Even though we allow quite a bit of slack, the stress may exceed a ton. Belays are fastened before and behind, and then Jack ties the pack with our most important equipment in it to his back. Looping a sling of rope about his body, he snaps it to the fixed ropes with a carabiner to form a little trolley. Backing off the edge hand-over-hand, head first, he crosses his legs over the heavy line and slides away from me into the darkness.

"See you later, Ax."

Slack goes my rope. Fritz takes up slack on his. If a bolt should break, or the fixed rope, we belayers would have to try to bring our man up in mid-air before his fall gained momentum or he swung crashing into one of the walls. Every precaution has been taken and Jack has literally placed his life in our hands.

His figure is a dark blur out in space. The moon is clouded over. He comes to one of the large knots. Here he must hang by his knees and one elbow, unsnap his trolley arrangement, proceed hand-over-hand past the knot, and snap in again. Tenseness oozes from the darkness.

Suddenly an oath escapes Jack's lips as something drops from him. Is it the carabiner that will keep him from falling off? He reassures us that it is only a piton as we see a flash of sparks and hear it tinkle far below. Several seconds later we faintly hear it hit again. As though this development were not disconcerting enough, a blade of light suddenly stabs the night, blinding us. "Turn that thing off!" we shout spontaneously but futilely. Encouraged by more acid words it winks out after a bit. To comfortable tourists seated at the evening campfire program at Camp Curry

the rangers announce that the Lost Arrow has finally been climbed, for they have sighted the white threads of our ropes in their telescopes. Perhaps it is as well that in the distance they did not note Jack hanging from them nor hear our harsh words!

Jack reaches the landing ledge and climbs to the rim above to be greeted warmly. The sporting thing to do now is for Fritz and Bob, the patient engineers of our four-man team, to come over on "The Lost Arrow Trolley and Scenic Railway." Fritz comes first, straining over the complication of the knot and up the arduous hand-over-hand pull from the low point of the traverse. He touches the mighty bulk of the Arrow tip and swings back, his strength beginning to ebb.

Descending to the ledge, Bob considers his turn. The ropes have become tangled. The night is advancing and the moonlight leaving the sky. The Lost Arrow has dealt kindly with its trespassers; we must not strain its generosity. He senses the responsibility of bringing back the last man. Disappointedly but wisely he calls, "Come on, Ax. I'm not crossing."

I stow some gear and loop the rest of our auxiliary ropes to a piton. I also fasten to the summit a little register to record the conquest of "The Last Error." In it are our names, the date of the first ascent, and the title, Sierra Club Rock Climbers. To retrieve our expensive nylon ropes we check them to see if they run freely through the eyes of the anchor bolts. They do, but the ropes are tangled out in mid-air. I must straighten them. Confident in the assistance of my three comrades, should it be needed, I back off, head down, into the blackness. After long, struggling minutes I swing onto the home cliff, feeling like a traveler returning from the moon. I untie one knot and throw off the rope end. Those above pull back our trolley cable and the Arrow is alone again. I am hauled up almost bodily. For the first time we all relax. The whole thing seems a climber's dream.

Friends who have waited patiently for hours have a warm fire to welcome us and hot broth waiting. Offering to help carry our heavy packs, they escort us down the trail. Our bodies are heavy with fatigue but our spirits exalted with the victory as our line of tiny lights, like so many fireflies, zigzags down through the night.

At Columbia Point we pause to rest. The three days of unforgettable adventure have forged a comradeship like that of a bomber crew coming through the perils of war. In the starlight we look back. There looms the Lost Arrow against its own black shadow, silent, implacable, a phantom in the night. Except for a point in time it is as lost as ever. Raising our arms toward it in a last salute, we comrades of the Arrow turn away and down into the night.

Ski Games

By JOEL H. HILDEBRAND

AT the end of a race, a long time ago of course, in which I stroked a varsity four and we finished second, a member of my crew remarked, "There's another season's training gone to hell!" I was mildly shocked, not at his language—I was accustomed to that—but at his utter dejection. After all, we had not finished last, and besides, we had had a good deal of fun during the long training season singing "close harmony," for instance, and we had been served thick, rare beefsteaks at the training table. These things, and others, constituted some salvage, enough to prevent the outcome's being considered a complete disaster. The difference between us was, I suppose, that he was rowing mainly for prestige while I was rowing more for fun, although I doubt if he rowed any harder than I did, for it is fun to do one's best. Football is a type of competition which suffers particularly from the fact that considerations of money and prestige have entered so largely as to interfere with the fun; half the players and half the contestants are plunged into a slough of despond after every "game." If it were a true game, "a good time would be had by all," winner and loser.

Now ski competitions are usually real games. The hazards are so great that no one can always win, and hence need not feel particularly dejected at losing. "The play's the thing," to stretch Shakespeare's phrase. I have seen a Stanford skier pat a California opponent on the back in praise of a particularly beautiful run. I have never heard of anything like that in football.

But existing forms of ski competition have not exploited all the possibilities of making games with the sport; games which novices as well as experts can enjoy. Jumping is a form of competition only for the very few. Cross-country racing with special skis on 18-km. courses, that have to be laid out in advance, at altitudes of perhaps 7,000 feet, is no sport for persons who spend the middle of the week in offices at sea level. Down-mountain racing and slalom racing, as officially managed, require an army of officials, timers, starters, judges, setters, gatekeepers, announcers, computers, ski patrol, doctors and nurses, comparable in total number to the contestants themselves. And when the meet is over, it is sometimes hours before the score can be published. This elaborate machinery may be all right for championship meets, managed by clubs having the necessary experience and manpower, but novice skiers and novice clubs are scared off by the complexities of racing under these conditions, and so the possibilities of making it a game are not realized. The purpose of this little article is to

suggest ski games that can be played with a minimum of officials, equipment and planning, and by skiers of all grades. Here are my suggestions:

1. A relay race around a short course, anything from, say, 200 yards up, with a few terrain difficulties such as ditches, thickets, logs. Touring skis alone permitted. Cheering section gathers in the middle.

2. Individual races over a closed course of any length, preferably short enough so that the contestants are in sight of the rooters most of the time. The turning points alone are marked, and each skier chooses his own route. The easiest route should not be the most direct. The object should be to favor judgment and skill over mere endurance. The contestants should be started simultaneously on a broad, level surface.

3. A race of greater length, invented by Milton Hildebrand and named a "Tourlauf," run under the following rules:

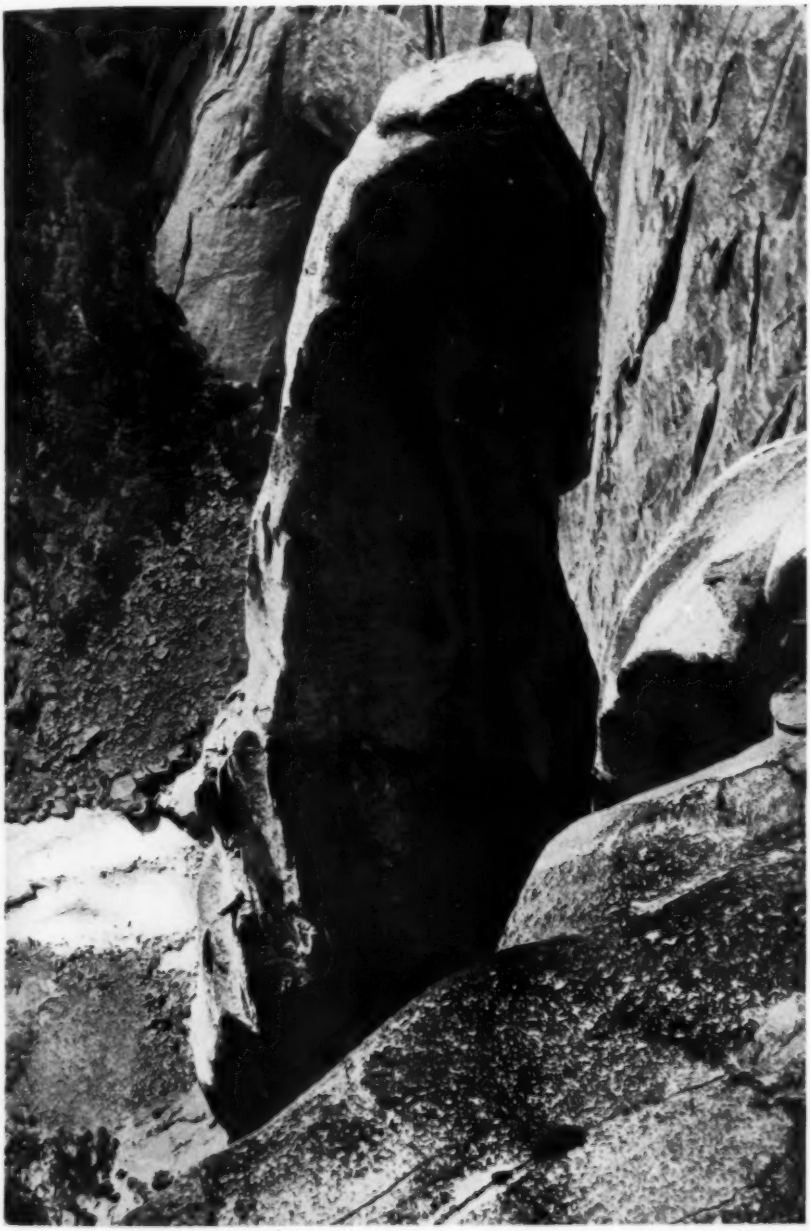
(a) The rules regarding starting, timing, right-of-way, and all other matters shall be the same as the F.I.S. rules governing cross-country races, except as modified in the following points. *(b)* Racing skis, bindings, boots, and all other equipment adapted to cross country racing but not to touring shall be excluded. *(c)* Each competitor shall carry a pack, a minimum weight for which shall be fixed (about 15 lbs.). The pack may contain any equipment not excluded in point *(b)* above. *(d)* Any equipment carried by the racer and not excluded under point 2 may be used by the skier during the race. Such equipment will include waxes, climbing devices, wraps, repair kit, etc. *(e)* The race shall be at least five miles in length. *(f)* The number of control gates shall be reduced to a minimum, thus giving the racer a chance to modify the details of his race course.

The following advantages are envisaged. No special equipment being necessary, more skiers can take part. The emphasis upon touring meets a natural trend in that direction, promotes good safe skiing, fits in with ski-mountaineer programs, and contributes to the training of skiers needed in military patrol. More head work is introduced into cross-country skiing by this race. A racer with a ski mender and a sweater in his pack is not so much of a liability to the racing committee as one who has no such equipment.

4. A type of cross-country racing now very popular in Scandinavia called "Orientation." Each contestant must find his way by map and compass to a designated point, on arrival at which he is given the next point, and so on. A special compass that serves at the same time as protractor has been developed.* I quote a description of the game and equipment.

Introduced in Sweden in 1918 by Major Ernest Killander, Orientation is a sport involving the finding of one's way across country with map and compass. Many people like to participate in it as a contest, and for this purpose elaborate rules and regulations have been drawn up by the

*Distributed in the U. S. by Silva, Inc., La Porte, Indiana.



THE LOST ARROW: A MAN IS CLIMBING HERE By Marie Zaepfle

LOST ARROW: ARNOLD STARTS UP FROM THE NOTCH By Anton Nelson

Swedish Union of the Sport of Orientation. But still more people, many of them office folk, housewives and the like, take it up in no competitive urge, but just for the sheer fun of the thing.

As in many other activities, the interest in Orientation grew slowly in the beginning. Not until about 1930, when equipment more suitable to the sport was introduced, did Orientation really become popular. Perhaps the most important of this equipment was a newly invented type of compass construction whereby the compass rotated on a transparent plate especially graduated for map reading. Problems and errors formerly encountered in transferring directions and angles from map to terrain or from terrain to map were effectively eliminated. The bearings can easily and swiftly be taken without orienting the map as was formerly required. The inventors call this new system the silva system—*silva* being the Latin name for forest. Other equipment, such as special map holders and head lamps for night travel added to the popularity.

Today in Sweden alone there are 1,500 clubs, representing 31,000 members, all banded together for contest running Orientation. Sometimes as many as 1,200 persons will be entered in one contest, and as many as 3,000 contestants on the same day in the district of Stockholm alone. Entrants are divided into five age groups, as follows: 16 to 18; 18 to 36; 36 to 42; 42 to 50; and from 50 on up. For those in the 16 to 18 group the distance is about three to four miles, for the 18 to 36 year category the distance is seven to nine miles, and in the older groups the distance requirements taper off.

Contestants in orientation running get only meager pre-race information. On the day before the race, they are told by the local newspaper to meet at a railway or bus station or some other designated place. Then they are transported to the district for the contest. On their arrival, they prepare for the race. The necessary equipment is not expensive. A map for the district—sometimes given to the contestants by the committee in charge—a compass of the above mentioned silva-type, special spikeshoes with very short and thick spikes or gymnastic shoes, and some outdoor or old clothes.

The contestants usually start individually with an interval between them of 15, 30 or 60 seconds. The rules forbid following one another to the various control stations. At the starting point—where the time is recorded—they get the information as to the location of the starting point on the map and as to the control station No. 1. From then on it is up to the individual contestant. Whether he walks or runs—or in winter, skis—is his own affair. He can go directly straight ahead, if that is possible, using the compass; or he can follow a road for some distance even though it may be somewhat out of line, and then take the bearing to the station. There may be as many as 10, 15 or perhaps 100 alternate routes chosen by the contestants between each station. When the contestant reaches a station, he gets the information regarding the next station, and finally to the end-station.

There are several variations in the contests. Some, for example, are organized as relay teams of three to ten men. There are also night races.

This type of competition should fit into the ski-mountaineering program.

5. Style competitions, featuring the various items from the standard

tests, with special emphasis on the items neglected by the "slope dope," such as stem turns in deep snow, the one-step and the two-step.

6. Fox chase. This has proven very popular wherever tried.

7. Short slalom race, with not more than, say, five gates, all wide.

8. A longer slalom, requiring but one official, who is setter, starter and timer. The start and finish must be in sight of each other; the finish gate is set at a right angle to the line of vision from the start so that the official, who operates from, or near, the top, can see when a runner passes through the final gate. Gates are 15 to 20 feet wide to save flags and course.

9. A jump of 10 to 20 feet from a take-off consisting of a natural hump. This is good for improving downhill running as well as preliminary to Class D jumping.

10. "Follow the leader," a game that most boys have played without skis. Each one in the line must in turn do whatever the leader does. But do not follow the fellow ahead too closely!

11. "Merry go round." This is already well known; indeed it is the only game many skiers ever play. It consists in being pulled up hill by electric power, running down as fast as possible, using the rump to check excessive speed, and then standing in a long line for fifteen or twenty minutes awaiting one's turn for another ride up.

12. "Me versus terrain." This is a game in which skill and judgment are pitted against topography and snow. Only those can play it who can go under their own power, uphill, on the level, and downhill, in snow that has not been previously smoothed out for them. It requires a certain amount of knowledge: the wax, for example, that enables one to climb on each of the various kinds of snow. It calls for judgment; one picks his own course, up and down, through the woods, across creeks on snow bridges. It is an elite game, played only by the skiing aristocracy; an adventurous game, ever presenting new problems and opportunities. It is a beautiful game, played in nature's supreme wonderland. Twice, during my recent trip to Donner Summit, I went to the Sugar Bowl—not the place most people call the Sugar Bowl, but the real one—under the pinnacles of Mount Lincoln. One of these visits was on a morning after a snowstorm, and every twig and tree was covered with jewels glistening in the sunlight. Snow banners were flying from the pinnacles. And no one was there but my two companions and I. A mile down the valley a hundred persons were standing in line, a quarter of an hour at a time, as they played "merry go round." I, too, play that game sometimes, but I like a little variety.

Mono Mesa, Sierra Sky-Island

By JOHN THOMAS HOWELL

PERHAPS the gently sloping sand- and rock-covered plain is five million years old, or perhaps it is only half that old, but the fact remains that it is much older than the spectacular escarpments and canyons that bound it. Although it is a very small part of what was once an extensive landscape, even in its present fragmental condition it represents what is probably California's oldest land surface that is unaltered by erosion. This bit of ancient plain is not found in the deserts nor in the valleys nor on terraces along the ocean, but, remarkably enough, it is situated on the very crest of the Sierra Nevada at an elevation of more than two miles above sea level. Historically it is part of a region of low relief, an area of plains and undulating hills, which were once found at low elevation where today the Sierra raises its forest-covered flanks and snow-flecked summits. For it was by a series of fault movements along the eastern edge of this matured landscape that the present mountain mass was lifted to form one of the largest and noblest fault-block ranges in the world. Profound erosion, first by water and later by ice, carved the slopes of the new-born sierra, but here and there along the summit crestline small restricted areas remained relatively unaltered, in general continuing to look much as they did long ago when they were so much nearer sea level.

One such area is Mono Mesa, a high granitic tableland that dominates the region immediately north of Mono Pass about the headwaters of Mono Creek. The climber, emerging on Mono Pass from the narrow and precipitous gorge that leads upward from Rock Creek, is confronted by this conspicuous topographic feature as he looks northward beyond the shallow glacial basin immediately below the pass and across the head cirque of Mono Creek. In the midst of a scene of superbly glaciated slopes and canyons, the gently sloping and finely graded expanse of the mesa stands in arresting contrast. Even the mountaineer who seeks the achievement of minaret and spire must perforce scan the velvet-textured monotony of this conspicuous tableland, but it will be the scientists, the geologists and the biologists, who will long to clamber up its crumbly side, to tread its paleomorphic contours, to seek some detail of its origin or secret of its inhabitants. For here is an island in the sky whose surficial features bespeak an ancient landscape, whose smooth rock- and sand-strewn expanse is alien to the adjacent avalanche chute, raw talus, and roche moutonnée, and whose very extent is as limited by thousand-foot glacier-carved escarpments and

declivities as is a true island by water. Pre-Sierra relic, alpine nunatak: what secrets does it hold that antedate the very mountains; what living things did it sustain when close begirt with gnawing ice?

Mono Mesa is readily accessible from the Fourth Recess of Mono Creek, where the 1946 Sierra Club Base Camps were established. From the lowest lake in the recess, with its dramatic contrasts of meadow-fringed forest and raw and awesome cliffs, one follows Mono Creek to "Gold Lake," first along the Mono Pass Trail and then along a well-traveled fishermen's trail. Gold Lake lies in a deep ice-scooped basin at an elevation of 11,000 feet and from the north its blue and green waters reflect the thousand-foot slope of Mono Mesa.

The ascent from the strand to the floor of the mesa is more tedious than difficult. A broad talus of great irregular blocks leads to a steep chute choked with sand, gravel, and boulders, and with every step small avalanches start and rocks roll down. By following along the side wall of the chute, one can avoid much of the discomfort of this tiring foot work, but even here the rocks are unstable and caution must be used in the choice of handholds and footholds. But withal there is exhilaration—the views across Gold Lake are ever-changing, the broad U-shaped canyon of Mono Creek carries the eye far down the mountains to the blue haze of the San Joaquin plain, the fine glacier-hung peaks of Bear Creek Spire range become visible above the Gold Lake cirque to the south, and, of course, above, against the blue sky, is the mesa.

Like similar areas in the Sierra, Mono Mesa is both thrilling and monotonous. Its sandy slopes, stone-paved flats, and shallow swalelike hollows are quite like those of Dana Plateau or the broad gently sloping southeastern shoulder of Mount Conness, while at no place on the mesa are there the steep rocky slopes similar to those encountered in the ascent of such unglaciated slopes as those on Mount Dana or Mount Kaweah. The broad open area, devoid of trees and shrubs, gives one the sense of unlimited space, and from the matchless blue of overarching sky and from the cleanness and propriety of everything below it comes a sense of primal purity and simplicity. Atop a peak, the struggle of ascent carries over in a yearning restlessness of spirit: on the mesa there are calm, relaxation, and repose.

A sweeping glance from a summit peak may encompass the whole horizon but only by a circuitous route around the edge of the entire mesa may all its views be enjoyed. Below the northwestern rim, Hilton Creek heads in a broad glacial basin and beyond its ice-scoured bottom and unbelievably blue lakes, one looks out to Long Valley, its reservoir, and the White Mountains. Farther to the east, the divide between Hilton and Rock creeks is

passed, imperceptible on the mesa, but once off this pre-Sierra landscape, it follows a noble glacier-carved ridge. Beyond the divide, the lower and middle parts of the Rock Creek Canyon can be seen far below, while along the canyon walls the long sweeping lines of great lateral moraines carry the eye far to the northeast toward gray and lavender desert ranges. From the eastern end of the mesa at its highest point, 12,240 feet, the upper part of the Rock Creek Basin with its myriad lakes comes to view, backed to the southeastward by the horseshoe-shaped crest of Mount Morgan and to the southward by Bear Creek Spire. Continuing counterclockwise along the mesa rim, one soon stands directly opposite Mono Pass and through the symmetrical notch formed by Mount Starr and "Peak 13,202" one looks at the sculptured mass of Dade and Abbot with their fine glacier. And so, after this circular sky-island stroll of a little over a mile, one returns again to the head of the steep avalanche chute above the blue and green waters of Gold Lake at the head of Mono Creek Canyon.

During the 1946 Base Camps from July 14 to August 10, a number of parties visited the mesa to investigate its remarkable geological and topographical features and to enjoy its unique panoramas of the High Sierra. Bent on botany, I was fortunate to make two visits. The first, with Allan and Grace MacRae, was terminated abruptly by a dense swirling fog and imminent rain; the second, by myself, was on the gloriously clear day following our "unusual" twenty-four-hour rainstorm. On these two occasions I found seventy-three kinds of plants, this figure not including the ten I found growing on the precipitous glaciated side of the mesa above Gold Lake. Since an approximate estimate of the number of all species of ferns and seed plants occurring in the Sierra Nevada above timberline is about three hundred, it will be seen that nearly one-fourth of the alpine flora of the entire range grows on the limited area of this sky-island. This, of course, is presuming that I found all the vascular plants growing on the quarter-square-mile of mesa-top. I did collect intensively; for, when not walking from place to place and when not looking at the scene, I spent much of the time on my hands and knees searching for some elusive alpine that might otherwise escape unnoticed.

Most of the plants were not spectacular and some were downright minute. There were only four woody plants—two pines, an alpine currant, and a granite gilia. The pines, whitebark and lodgepole, were extremely dwarfed where they nestled among sheltering boulders along the southern margin of the mesa and obviously they were not reproducing themselves. Of the herbaceous plants, more than one-third belonged to the ubiquitous alpine grasses, sedges, and rushes, with frequently attractive forms but with incon-

spicuous greenish or brownish flower clusters. The beautiful and really showy Sierra alpines were represented by the columbine, polemonium, Davidson penstemon, and hulsea, although there were other attractive species among the eriogonums, drabas, phloxes, and various daisies.

But botanically speaking, the most exciting plant on the mesa was one of the pygmies, a tiny mosslike sandwort, less than a half inch tall, which had not been reported before in California. Isolated on this alpine Sierra tableland when most of its kind are found in Arctic latitudes and in the Rocky Mountains, what a venerable and far-flung history this plant proclaimed! The migration of an Arctic flora, the orogeny of a new sierra, the glaciation of its juvenile slopes, the preservation of a pre-Sierra surface, the survival of a floristic fragment. Such is the story of *Arenaria Rossii,* and so far as its California sojourn is concerned, a historic epitome of Mono Mesa and all Sierra sky-islands.

Homecoming, 1946

By CHARLOTTE E. MAUK

JUST when does a High Trip actually begin?

I found myself pondering the question as we doggedly put one foot ahead of the other up the long, dry trail climbing out of Carroll Creek. A few days earlier I might have stated readily enough, "Oh, when all the High Trippers gather at the road end for the first dinner in camp," or (from the inside view), "the first night the Commissary gang camps together." But now I wasn't so sure that the High Trip, as we had long known it, had begun even yet. Certainly its exhilaration had not.

To be sure, most of the commissaryites had been together for several days, and had served the first camp dinner to "the public" the night before. But now as Dick Leonard and I, last out of camp, trudged up the trail along which the others had already passed, a haze of unreality persisted. The incongruous present could be reconciled neither with memory nor with expectation. This sliding, sandy mountainside; this hot, dusty trail zigzagging endlessly up between dusty gray bushes; this haze-filled view down onto a dry, baked valley in which swirls of dust rose from the flat, hot bed of a dry lake—could this be any part of the Sierra? Could five intervening years have transmuted anything like this into longing memories of joyful mountain days?

Countless back-slipping steps brought us eventually to some trees, in whose welcome shade we rested momentarily, and after more climbing we at last rounded the hot shoulder of a dividing ridge and for the first time looked ahead to timbered slopes. A noon-time stop conjured up some of the remembered past—there was the familiar bandanna lunch, and when we found ourselves growing too cool in the shade we had sought so eagerly, we realized with sudden gratification that all our climbing had brought us to a respectable elevation, at any rate.

A packer paused to pass the time of day; a straggler whom we had overtaken caught up and went ahead; we finished lunch and pored over a map; the fingers which traced out routes on that map were already carrying the grimy scars of camp work. These things were normal. Yet unreality still prevailed; there was no glad realization of new adventure.

There was another long uphill stretch of sandy trail—through a sparse, dry-floored forest, now—then an unspectacular pass and the quick descent of a rocky canyon wall. From that oven-hot wall we could look down to what must surely be a small stream, and our steps quickened as we began

to hear the indescribably welcome sounds of water tumbling over rocks. This was more like it. Perhaps it was only the absence of water which had made the day seem strange.

As we approached the creek crossing we could see a wisp of smoke rising lazily from a shaded spot, and Jimmie James greeted us: "Have a cup of tea?" There she was, relaxed and cool beside the stream, leisurely tending the tiny fire under a billy can, and looking as natural and matter-of-fact as though she had been dispensing tea to thirsty travelers every day for the last five years.

Gratefully we knelt by the stream to wash hot hands and faces, then found shaded resting places and admired the amber brightness of tea in tin cups. Snatches of small talk drifted among us as lightly as smoke from the fire. Bandannas were explored for remaining bits of lunch. Muscles wearied by sandy plodding grew rested. Tea cups were emptied, refilled, emptied again. Thoughts slipped easily back to other tea fires by other streams, and the long years between this day and the summer of 1941 became a little shorter. The present moment no longer stood apart in unreality, but began to blend into a pleasant continuum in which were united all the tea fires of the past and all the friendly little fires yet to be built. Was the answer to my question here? "High Trip really begins with the first trailside tea party."

That night, at Horseshoe Meadow, warm campfire light glowed on the shafts and branches of trees which stood above the circled campers, and sparks danced in rising showers when wood was thrown into the flames. The firelight found lesser echoes in flames still playing in the pit fires in the star-roofed kitchen, or in dying flickers in the stoves, or even in tiny billy-can fires by scattered bedsites; but the focus of activities, just then, was within the circle, where Dick Leonard stepped forward to address the campers. Among the faces turned toward him were those which had often before been warmed at mountain campfires, many others on which was written the wonder of a new experience. Maybe High Trip begins, for some people, with the first real campfire.

The next day, a layover, fell into a three-part pattern so natural and so well established that old-timers probably didn't even think about it, and newcomers scarcely found it strange.

The "customers" were given breakfast, drew their lunches, and mostly disappeared from sight. Their day would be occupied with exploration, fishing, climbing peaks, laundry, sunning, bathing, photography or sketching or painting, helping in commissary, tea parties, gossip, botanizing, musical sessions, getting acclimated and oriented, or just plain lazing.

The packers got up early, ate a hurried breakfast, ranged cursing after scattered animals, herded them into camp and saddled up, and rode back to pick up the inevitable food cache—that ton or two of supplies which must of necessity be brought up or moved ahead when dunnage and equipment are staying put.

Commissaryites got up early, built fires, prepared breakfast, made packers' lunches, answered questions, hauled water, set up the lunch line, stoked fires, cleaned up the kitchen, answered questions, put lunch things away, organized the "storehouse" in the shadiest spot, put up some tarps, answered questions, supervised volunteer helpers, dug more pits, hauled water, answered questions, cut wood, planned menus, answered questions, and finally drew deep breaths. In addition, on this particular morning they held an organization meeting to arrange the division of labor, before they disbanded for a few hours of individual pursuits. As afternoon brought them together again and dinner preparations got under way, I mused, "Perhaps the High Trip is actually begun when the commissary crew has shaken down into smooth operation."

Part of our next move was almost as hot and dry as the first day had been. The welcome difference was that we did not have to climb up the baking, sandy slope, but could contour along it on a skillfully chosen short cut which took us from Cottonwood Pass almost to our next campsite with practically no change in elevation. Dick Leonard laid out the route, others in commissary helped to duck it, and many passing feet worked it into an obvious trail. What it had spared us—a long descent to Whitney Meadows, hot plodding across the surrounding sandy wastes, and a climb up to Siberian Pass—became apparent when we gazed down at the great flats below us, tried to watch the dusty irregular blotches which were pack trains moving along the regular route, and lost them from sight in the shimmering heat currents. On our high route we were hot and dry—but not *that* hot. When our course began to swing northward, we could get views across the Kern to the Kaweahs and the tumbled country near Mineral King, and our parched throats were suddenly not quite so dry. We were not yet in the high, cool atmosphere of the mountains we knew, but we had at least glimpsed the kind of country that was familiar to us—and we were moving north. Presently some rugged, serrated crests came into view, timber slopes before us dropped down to green little valleys, and we worked down through beds of lupine to a camp on Rock Creek.

It was at this campsite that I found yet another possible answer to my question. Our camp at Horseshoe Meadow, although nearly as high as this, had looked out to a single rocky eminence and some round and gentle

wooded hills; here, though, the horizon was high and jagged, made up of broken spiry crests rising above the highest straggling timber and topping the steep cliffs of irregular granite blocks. The eye was compelled upward. This was actually *in* the mountains, not just a stopover on the way to them. The real beginning of a High Trip may well be the first morning we wake up in a camp—near timberline—from which we can reach truly alpine meadows, explore cliffs and clefts and spires, or climb a major peak.

Even this answer did not satisfy me, though. Neither on this morning nor at any other time had I sensed a moment of demarcation, after which I could tell myself, "Well, the High Trip has really got under way, now." I only knew, with a deep conviction independent of explanation or logic, that I had experienced a home coming. This camp was new to me, yet here, under sheltering trees beside a lush meadow, with austerely bautiful peaks rising beyond, was the familiar high-mountain reality I had been seeking through the haze and heat and dust of those first days.

What it was I had been seeking—and now had found—I could not say. The happiness of a mountain day is not a thing, and cannot be analyzed into so many distinct parts. It is a nonmaterial entity to be experienced and cherished by all the senses, but not to be questioned. Perhaps a part of the charm of mountains is that there the very joy of existence is in itself sufficient answer to almost any question. It is enough to recognize, without trying to catalog, the brilliance of the sunshine; the clear blue vault and the answering blueness caught in shadowed clefts; the fragrance that the sun draws from a pine tree; the silver glint on willows dancing in the wind; the crystal smoothness of a streamlet curving through a meadow; those rugged, thrusting crags against the sky; the tender, graceful pattern of tiny plants against a boulder; the sound of wind in branches overhead, from gentle whisper to a surflike roar; the rough and satisfying feel of sun-warmed granite.

One of the finest things about a High Trip is the opportunity for solitude. Not the dubious isolation that one achieves in a city by locking himself into a room which is still surrounded by people and activity, but a release from mechanized compulsion, an opportunity to feel at one with a natural world. To seek solitude in the company of so many other human beings may seem paradoxical; yet wilderness has a way of absorbing people, imperceptibly. As Dick Leonard puts it, "You can spread them pretty thin along ten miles of trail." So long as they leave behind them no artifacts nor structures, no disruption of the balanced interplay of indigenous lives, no scars upon the forests and meadows, they can come and go with no damage to the natural scene. Their voices are swallowed by the

vastness, their footsteps are not reëchoed. The shocked reaction of the uninitiated person who gasps, "A hundred and fifty people!" never fails to amuse me; I always wonder, with a secret smile, if he envisions the entire party marching along in lock step. The little groups of people moving along the trail at their own pace never seem to add up to a large crowd. A person who walks neither faster nor slower than the average may encounter no more than a dozen people between breakfast time and dinner time. An individual can, if he wishes, spend part or all of his day essentially alone. Here is an advantage of a large party—the "safety in numbers" factor. So long as a camper follows the regular route, or tells someone where he is going fishing, or lets it be known that such-and-such a promontory is the point from which he hopes to make a photograph, he will not be alone and friendless in case of mishap.

Out of solitude may grow a sharper perception of the quiet life about us, a deeper appreciation of its features, a fuller understanding of the world's wild beauty. Alone, or with a sympathetic companion, the wanderer in the mountains is receptive to what amounts to religious experience. It may be the culmination of a lengthy crescendo, as the final dazzling brightness of a blazing sunset; the ultimate step onto a summit and the scanning of a horizon which has become ever wider as ridge after intervening ridge dropped below it; the long-awaited breaking of a magnificent thunderstorm which has grown through hours of swelling clouds and brooding purple-gray shadows. Or it may be but a fleeting moment of revelation, as a glimpse of exquisite grace and rhythm in a wind-stirred columbine, the mysterious poignant sweetness of the song of a hermit thrush, the irised flash of flying spray above a pool.

These things, perhaps unanalyzed but surely recorded, make up man's deepest memory of mountain experience. He may never mention to another his own inmost feelings, nor even admit to himself that there is something poetic about his personal response to surpassing beauty. He may scarcely recognize its absorption into his spirit. But the unrecognized recall of myriad strangely moving moments of awareness blends into the nostalgia which is evoked by a photograph or a painting, a word picture, or the vivid memory of some mountain scene.

It is the superficial memory, the less significant incident, which a camper is likely to recount when he tries to tell someone else about a High Trip. It probably is the only kind of incident he *could* describe; inner reactions—or the personal connotations of the simple beauty of grass, rock, trees, flowing water, life persisting in unexpected places—are too private. The big things are always surfaced over, in memory as well as in

communication, with little things—those little things that are noticed first, perhaps forgotten soonest, but of most importance in lending color and texture to the pattern of High Trip days. It is the little things that amaze, confound, or amuse the newcomer; the little things whose recall delights the returning old-timer.

From day to day, little things long familiar to commissaryites but now half forgotten in the too-long interval came crowding back into memory. There was that characteristic little flick of the fingers with which Martin put the finishing touches on some culinary creation. There was that shining look of triumph with which a young fisherman would bring his catch to the kitchen, and his lurking expression of ill-suppressed pride when the cooks called out that his fish were ready. There was the pleasantly rhythmic little chop-clop-clop of knives on cutting boards, a cheery accompaniment to the lively conversation of the vegetable workers clustered around the salad tub. There was the unfailing perversity of the wind, which blew innocently in one direction while the stoves were being placed and then promptly reversed and blew smoke in the cooks' faces as soon as meal preparations got under way. There was the funny flapping plonk! plonk! plonk! plonk! of kyack lids dropping back into place as some commissaryite went briskly down the line, peering into one box after another for some elusive item (which was no doubt lurking in the one kyack which was under something heavy). There were the evening parades of flashlights converging on the hot-water tubs when campfire was over, and the muffled gurglings of hot-water bottles being borne triumphantly away. There was the avid gleam in the eye of the laundry-burdened unfortunate who arrived just in time to see the last available bucket being carried out of the kitchen, then started looking about for something that could be snitched from commissary workers. There was the wistful glance of the teen-ager, just served a portion of dessert twice as large as could be found anywhere but in the mountains, as he asked ruefully, "Is that all?"

Trying to satisfy the appetites of their elders, let alone those of the teen-agers, is a far bigger job in camp than at home. There is something about the combination of altitude, exercise, and crisp air—to say nothing of a few cold nights thrown in—that renders the demand for food almost pathological. The safest way to have enough on hand is to compute carefully what a given number of people should require, and then multiply the resulting figure by about two. Raffi Bedayn has become so skilled at making such computations that he can plan a High Trip for a hundred and twenty-five people as easily as a housewife plans a dinner-party for a dozen.

With that planning, however, any comparison ends. In the rest of the story—the ordering and the transportation and the preparation—the housewife has all the advantage. For one thing, she always knows, from day to day, just where her stove is going to be, and that her kettles and pans will retain their normal shape—an assurance which a pack-trip cook cannot enjoy. For another, the food she is going to use can be kept in good condition in the refrigerator. She probably has been able to purchase what she needs within a day or at most a week of use, thus taking advantage of a changing market and fluctuations in supply; and she has had a better chance to get scarce items because she needs only a small quantity. But for the High Trip—well, we took what we could get, and were thankful. We hope we were also sufficiently ingenious. For variety, the diners could look at the scenery, even though they could not always find it (the variety *or* the scenery) in the food. The sameness of the meals was not the fault of the planners, but of (*a*) supply houses which couldn't supply, (*b*) supposedly cold storage which wasn't cold enough, and (*c*) a gamble into which we were forced—and lost. Six-weekers still shudder at the thought of macaroni, and sympathize with the serviceman's views on spam. However, commissary did its collective best, and the campers were gratifyingly cheerful and good-natured. Maybe they, too, were thinking, "It will be different next year."

If food is near the top of the list of campers' recollections, then weather is scarcely less important. Spam and rain, rain and macaroni!

The storm that started just after we had all got safely over Foresters Pass was something we could take in our stride—for the first couple of days. But when it followed us to Charlotte Lake, old-timers began to talk about the solid week of rain at Milestone in 1936. "That," they reassured one another, and tried to tell newcomers, "was a *lot* worse." People who had not been at Milestone in 1936 were skeptical but on the whole polite; they permitted themselves only a few fishy glances from under dripping hats or hoods. By the time we had made our sodden way down from Glen Pass and had splashed past most of the Sixty Lakes, even the storms of 1936 seemed to be growing milder. By the seventh wet day we had begun to wonder if there were to be thirty-three more, but the next afternoon brought sunshine at last—glorious, golden sunshine to steam out the puddles and to dry wet clothing and lift our spirits as high as the domed clouds that floated, brilliant, in a blue sky. And maybe the 1936 storms weren't such pikers, after all.

Just so the last-two-weekers wouldn't have to carry their rain gear home unused (or, as in 1940, incorporate a rain-fashion show into Carnival Day

so the girls could show off pretty raincoats), the management arranged to have the dust laid at Colby Meadow. Of course, no one would have thought that thunder and lightning and hail were necessary to lay the dust—but at least no innocent freshman will believe you now if you try to tell him that "it never rains at night in the Sierra."

When we have reminisced about food and weather, and recalled the hundred and one humorous or solemn or poignant incidents of a High Trip, and pored over pictures of pass and campsite, we have perhaps forgotten that one factor which makes it, truly, a high trip: the altitude.

The 1946 itinerary was indeed a succession of high camps. With the exception of a one-night stopover in Goddard Canyon, every camp was higher than the highest pass crossed in 1941, the year of "the low High Trip." Each camp after the first had its own particular charm, its own featured view of peaks and crags; yet all were alike in the clarity of the atmosphere, the alpine nature of the meadows and gardens, the nearness of the stars, and the exhilaration which accompanies altitude.

A quick recapitulation must surely bring back a flood of memories to every high tripper—of this or any other year. These were the 1946 camps:

Horseshoe Meadow (9,750 feet), where the freshmen learned to dread that campfire chant "More wood!" and Francis Farquhar's roll-call revealed centuries of camper-years of High Trip experience among the old-timers.

Rock Creek (10,450), where climbers got their first innings (Mounts Le Conte and Langley, to say nothing of The Mitre); where there were mass mid-day migrations to Iridescent Lake; where the Polemonium Club found a lovely practice crack within some twenty feet of campfire; and where the horses scampered playfully (traditionally, too) through women's camp each night.

Whitney Creek (10,700), where the management chewed fingernails until two nonclimbers got safely but belatedly into camp from a climbers' short cut; where day and night ascents of Mount Whitney were entered in the signout book; and where the ranger and his wife had more company all at one time than their camp had ever seen before.

Tyndall Creek (11,000), where dinners cooled while diners watched the sunset, and the fiery clouds brought to some old-timers' minds uneasy memories of grayer and wetter clouds, the deluge from which—in 1936—threatened to wash Tyndall Creek and Milestone Basin campsites down the Kern.

Center Basin (10,300), where clouds which had been thickening while we crossed Foresters Pass brought something more than sunset colors, and

the long-suffering cooks found themselves crowded out into the pelting rain by all the "public," who rushed for the shelter of the kitchen tarps; where the second night's campfire took full advantage of a rainless interval which was long enough for an inspiring conservation address by Francis Farquhar and one of the cleverest Freshman Shows anyone could remember; and from which two-weekers took sad and sodden leave to go out over Kearsarge Pass while the holdovers established camp at

Charlotte Lake (10,400), where it kept on raining, with brief intermissions, for four more days and nights, and bedraggled newcomers began to wonder what they had let themselves in for.

Sixty Lakes Basin (10,550), where pack trains were so delayed by a thunderstorm on Glen Pass that commissary had to conjure up dinner for 145 cold, wet, hungry customers without benefit of either stoves or kettles (and found the problem reversed on the following night, with plenty of cooking utensils but nothing to put in them until belated pack trains brought the cache into camp); where many a camper awoke after heavy night rains to the private conviction that he must be lying in the sixty-first lake; where the eighth and final day of storm ended in so glorious a sunset that the whole wet week seemed worth while; from which a sizable party climbed Mount Gardiner; and where photographers, climbers, sunbathers, fishermen, launderers, and lazers alike reveled in the one day of sunshine before they had to move from this beautiful camp.

Twin Lakes (10,580), where some campers complained that it was a major mountaineering feat to reach the campfire site; and where every photographer in camp must have sought the charming near-by lakelet in which Mount Clarence King is so beautifully reflected.

Upper Basin (10,500), the trail to which led through acres of fragrant lupines, and where we had the delightfully novel experience of watching a vigorous thunderstorm—complete with thunder and lightning, heavy rain, and probably hail—which arrived on Pinchot Pass after we had left, and never did catch up with us; also where Lewis and Nate Clark and Dick Burnley joined us after their descent of Enchanted Gorge, and contributed to our campfires, respectively, a description of their trip, a gripping melldrammer in which Nate played all three parts with greatest verve, and a story of Clair Tappaan Lodge.

Palisade Lakes (10,800), where the art exhibit and a clever Freshman Show were overshadowed by the misfortunes which came thick and fast, Helen Smith having her shoulder broken by an inexplicable falling rock; Tom Simons, the packer who took her out to Bishop, reaching town just in time to get himself into the hospital with a raging fever; and three com-

missaryites who had misunderstood route directions being benighted on their descent from the Middle Palisade—to the concern of the entire camp.

Dusy Basin (11,000), reached, via the famous Knapsack Pass short cut, by what was probably the weariest but most inspired High Trip party of all time; where middle-two weekers departed regretfully and their successors arrived in far better weather than had graced the exchange over Kearsarge Pass; from where North Palisade and Mount Agassiz were climbed; and where there were more of a series of knapsacking side trips.

Le Conte Canyon (10,500), from which climbs of the Black Giant were made; and where the untoward whiteness of the morning sky, as we prepared for departure, correctly presaged another demonstration that "it always rains when the Sierra Club crosses Muir Pass."

Colby Meadow (9,900), where the *n*th attempt finally resulted in a bridge across the stream to men's camp; where a five-night stand was none too long, what with climbs of Mount Darwin and The Hermit; fishing or photographic or exploratory expeditions to Evolution Lake, Darwin Lakes, McGee Lakes, and innumerable equally fascinating destinations; where the Carnival Day included not only a bandanna show and a tea party, but even a baseball game; where frequent but not too violent rains prompted everyone who had experienced the eight-day siege on either side of Glen Pass to tell everyone who had not how much worse *that* had been; where the smooth granite stage before the campfire was used for some of the most varied entertainment of the trip, including acts by visiting knapsackers, songs and rope tricks and talks by packers, many musical numbers, and a commissary show in which the participants, impersonating prominent characters among the packers and their four-legged charges, had even more fun than the audience; and from which we departed, one frost-bright morning, with the regretful conviction that the trip was practically over, and anything from then on was more or less anticlimactic.

Goddard Canyon (8,450), where we came into camp awed by the ancient junipers between which the trail makes its way down the canyon wall; and where the blessings of the civilization to which we were returning were dubiously demonstrated by noisy, newly arrived neighbors, who had been quaffing more than the sparkling waters of the San Joaquin.

Piute Creek (9,800), where a feature of the camp was the beautiful falls-fed pool in front of the commissary, into which a smooth slanted apron of granite spilled more than one unwary camper, to the heartless glee of the kitchen crew; and where, on the last morning, a splendid group of volunteers turned to the aid of commissaryites in a final super clean-up, inventorying and oiling utensils and tools for their winter-long storage.

With the end of the trip only a day's walk away, little surges of regret must have directed each camper's last-day thoughts to a review of what the two or four or six weeks had brought to him. What must the images have been that superimposed themselves on the grand pattern of cliffs, forests, meadows, streamside trail, rugged colorful peaks, rushing falls and rapids, tranquil lakes, and final rocky pass? What inner perceptions intensified the beauty of delicate flowers, moss-softened stones, the glisten of pine needles or their patterned shadow on granite, nodding graceful grasses or the tiny rill chuckling beside them, the countless minutiae which become more precious with each day of mountain experience? It is of these images and these perceptions that a fabric is woven to clothe the framework of remembered itineraries. For each individual the images are—and must be—distinct and personal, yet there are enough common threads to relate all the tapestries and to enrich them with shared interest.

Usually the crossing of a pass is a joyful event, a clearly defined step in our progress from one beautiful watershed to another. There is the climb during which we stop, from time to time, to note how prettily the little lakes lie in their granite hollows, how far below us are the trees by which we camped. There is the moment when we reach the top, looking forward for the first time into the canyon or the rocky uplands in which we are to spend the next few days. For a moment which may be brief or long we pause to gaze back at the panorama we are leaving, then start the eager descent to something new. On Piute Pass the last long backward look across the tumbled rocky stretch of Humphreys Basin was a regretful leavetaking. Although there lay before us on the downward trail a beautiful succession of lakes and bright-hued cliffs and junipers and lively streams, we knew the next high camp was now a year away.

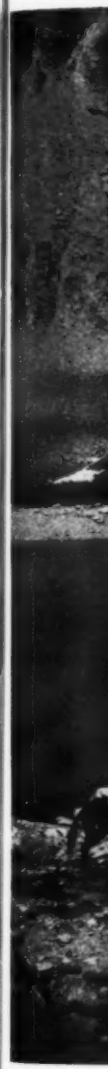
Somewhere below the last rocky switchback, below the last crossing of the willow-arched stream, beyond the last green-shadowed aspen grove in which the only voices were those of the whispering leaves, the trail leveled and broadened and became road. We could still look ahead and see steep red slopes above clumped willows, or backward to colorful jagged cliffs on which junipers clung in improbable attitudes, but beside us were camps full of automobiles and house trailers, striped awnings and beach umbrellas, and untanned people eating at tables. A mood which had been born in high quiet meadows, had grown in spaciousness and isolation, and had survived six weeks of rough terrain, heat and cold, storm, weariness, even some worries, was gone beyond recapture. Next summer, maybe—

A few minutes more brought us to a broad meadow, talus-bordered, with the now quiet stream meandering through it. Here shimmered a kaleido-

scopic jumble of cars and trucks, mules and packers, kyacks and dunnage bags, people reading mail or gathered in little groups to exchange addresses and last-minute communications, some looking self-conscious in unaccustomed skirts or wrinkled sports clothes.

It was a lively scene, but wistfulness and regret ran in counterpoint to the brightness. The trip was ending, breaking off associations and experiences possible only on such an outing. There was laughter, though, as someone pointed out, "Only forty-six weeks until next High Trip!"

The answer was clear at last. High Trip begins, for any individual, at the moment he first discovers that he is at home in the mountains, and after that it never has to begin again, for it never really ends. There may be breaks and interruptions—sometimes for many years—but for that person High Trip goes on as long as his spirit can seek and find mountain wilderness.

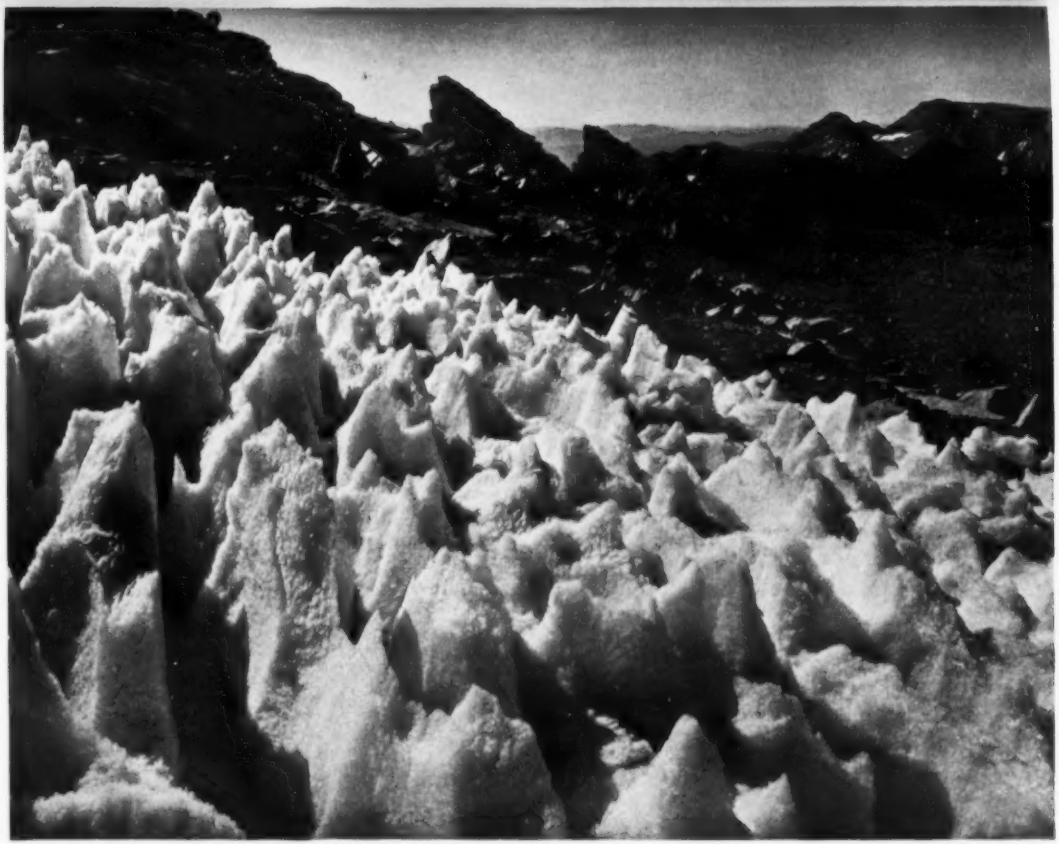


NORTH OF P

NORTH OF PINCHOT PASS By Dick Freeman

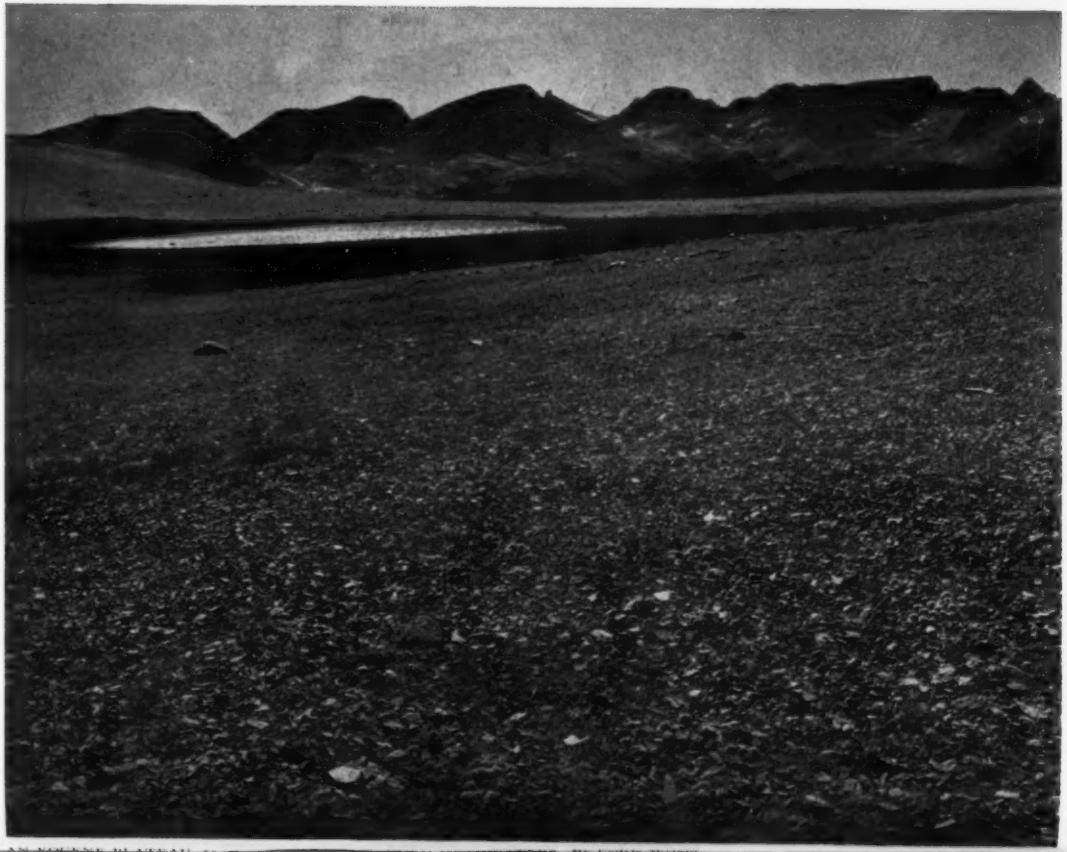
SIERRA SUMMER—1946

A Signature of Photographs from the Outings



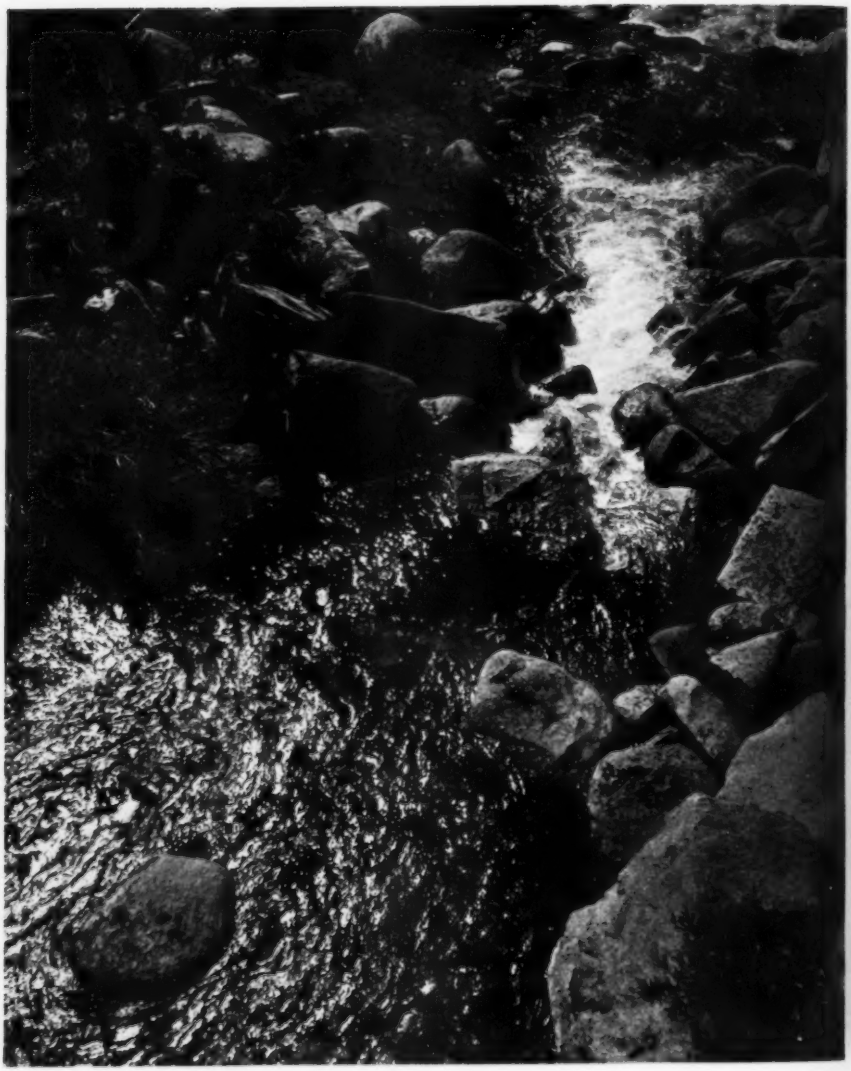
SUN PITS NEAR THE WHITNEY SUMMIT By Cedric Wright

ROCK CREEK CAMPFIRE By Cedric Wright



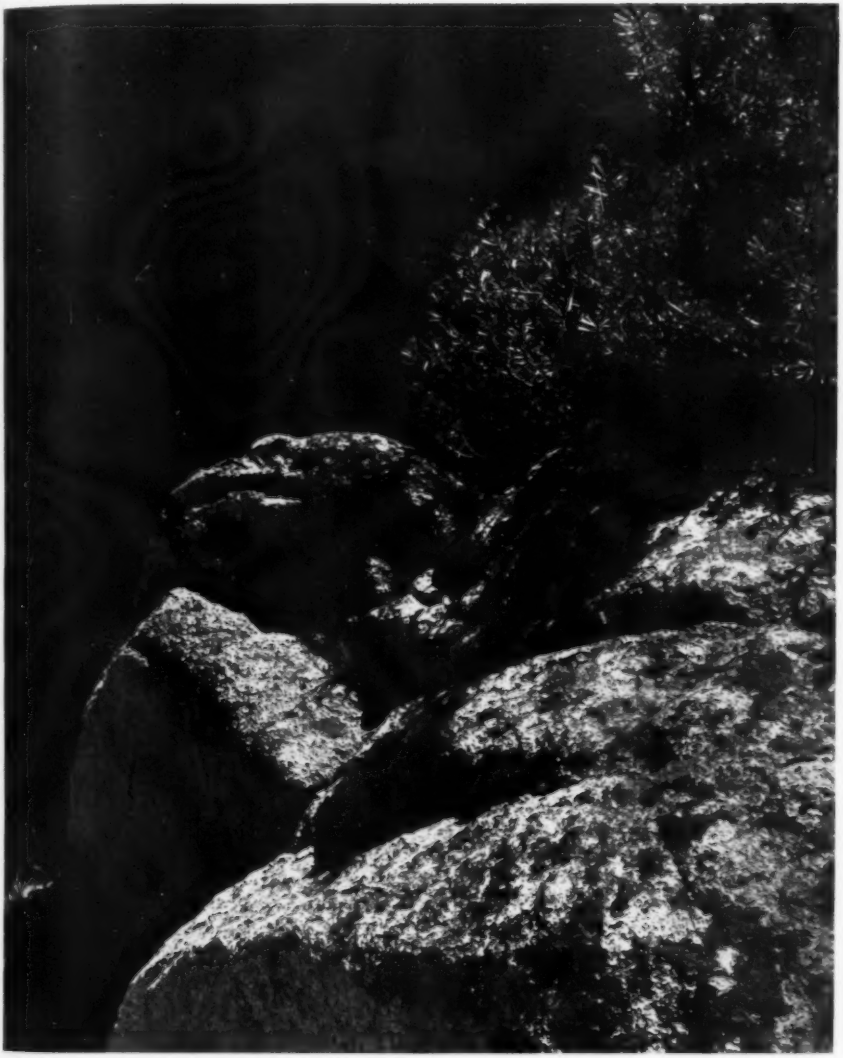
SIXTY LAKE BASIN: A STORM BREAKS By Cedric Wright

Cedric Wright

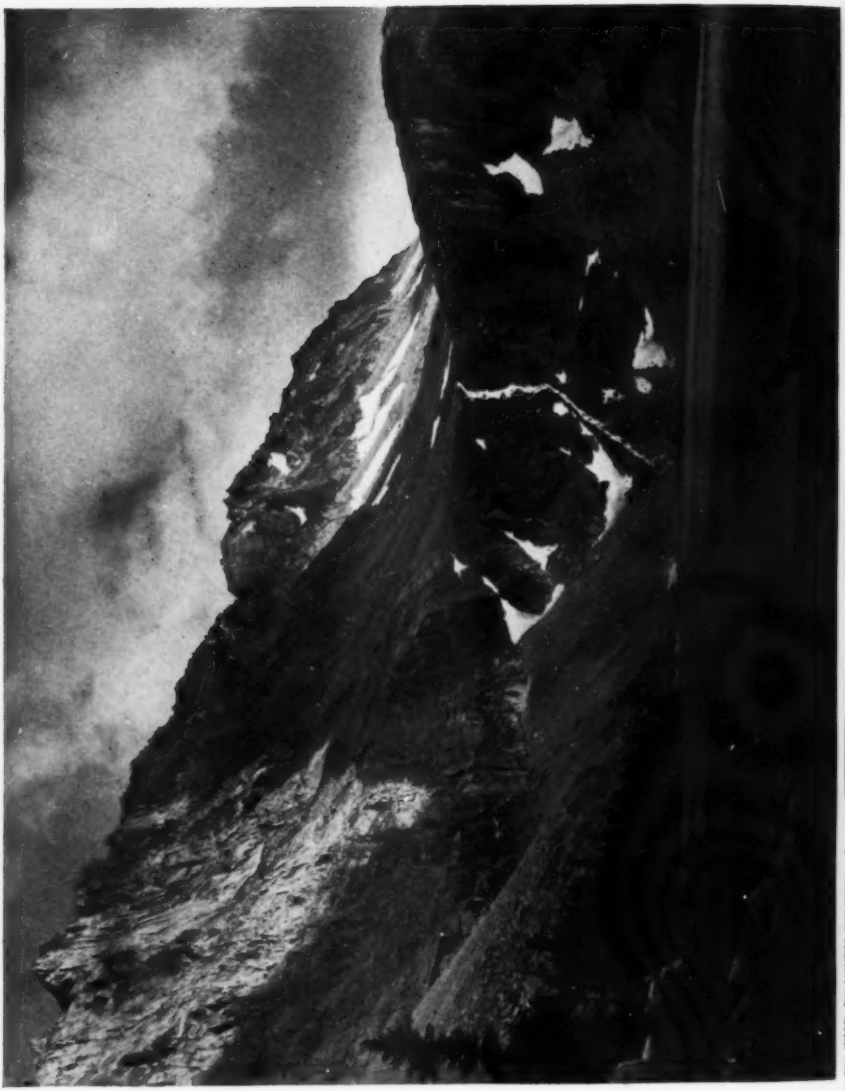


SIERRA STREAM By Cedric Wright

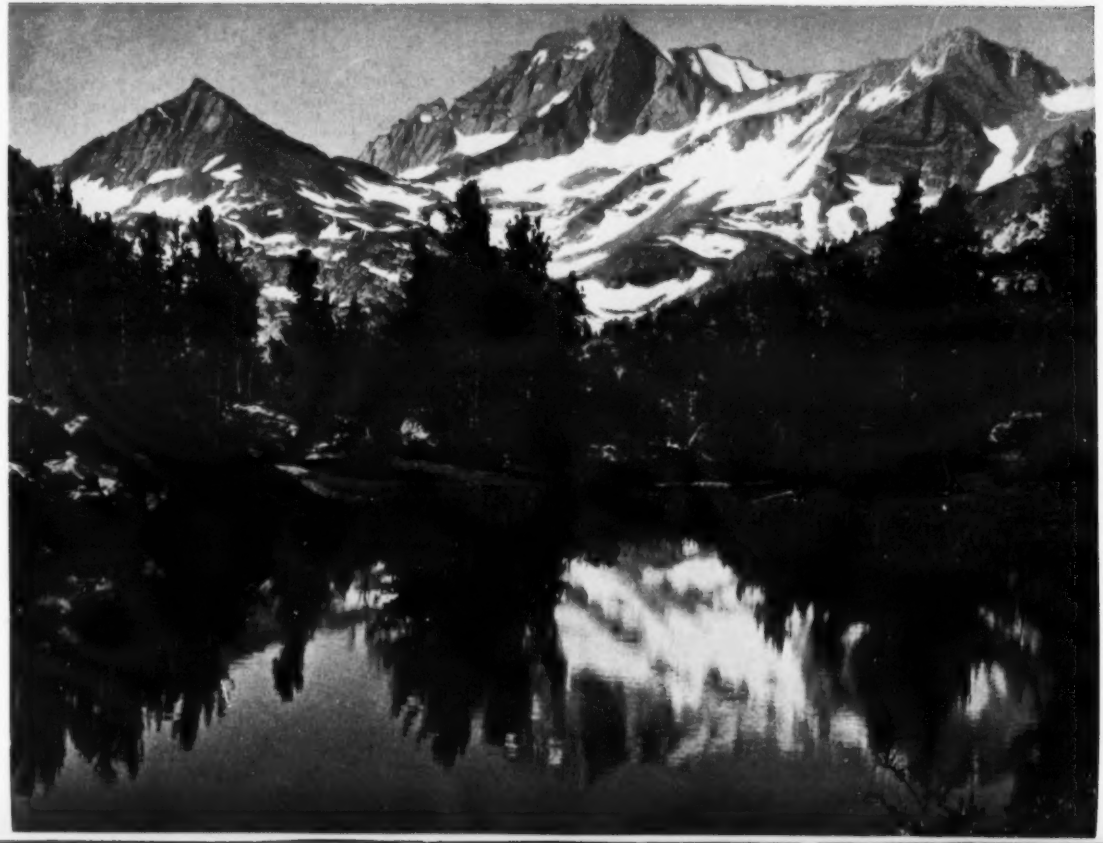
LAKESHORE



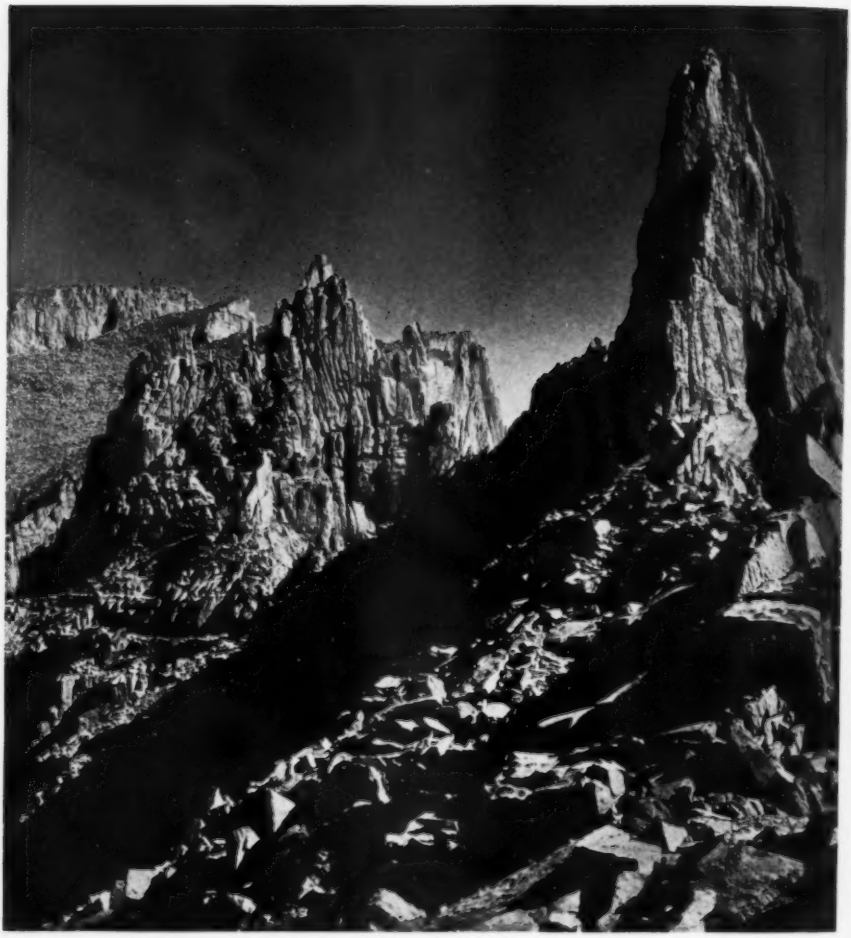
LAKESHORE GRANITE By Cedric Wright



MONO CREEK COUNTRY By James McBride



SUMMIT GRANITE By James McBride



ALONG THE WHITNEY TRAIL By Cedric Wright

The Range of Light from Mount Whitney

By BLANCHE STALLINGS

ABOUT eleven o'clock on Sunday night, July 14, we turned away from the big High Trip campfire, at Sierra Creek, and set off to climb Mount Whitney by moonlight and see the sunrise from the summit. We hadn't had much sleep. Some had stayed around the campfire, others had gone on ahead, while some of us had crawled into our sleeping bags for a little nap, just long enough to get deliciously warm and drowsy, then crawled out and into our boots. But no matter. You can sleep practically any night, but you can't climb the highest mountain in the United States by moonlight any night, and see the sunrise from the top.

We got out of camp and over the first stream without too much difficulty. As we walked along the trail, eager and hopeful, going in and out of the shadows, we had a feeling of gratitude tinged with a sort of wonder to think that time and place and circumstances had coincided to make it possible for us to be where we were. Ever since the Sierra Club's first outing down in the Kern country, in 1903, High Trip parties had been climbing Mount Whitney. What a privilege, what a pleasure, what an excitement, to be carrying on that tradition, even though our "climb" meant merely walking up the trail four thousand feet to the top.

Furthermore, although we didn't yet fully realize it, we were to carry on another Whitney tradition, namely, shivering on the summit in the midnight-to-sunrise hours. Of course it was John Muir himself who started that tradition back in 1873 on his first attempt to climb Whitney when, as Francis Farquhar tells us in "The Story of Mount Whitney," "he was among the summit needles (perhaps in the neighborhood of Mount Muir) by midnight or eleven o'clock and had to dance all night to keep from freezing,"—and was still able to record that "the stars and the dawn and the sunrise were glorious." But summit shiverings would come later. For the present, although the night was cold, we were warm and quite comfortable.

It really seemed like no time at all until someone was saying, "Do you realize we're at timberline?" We stopped and looked about us. There was one large tree skeleton standing off up the slope to the left of the trail. We'd left the trees below all right. It had been suggested that we carry up wood if possible, so we gathered what sticks we could find and went on.

Then came those wonderful hours of walking on and on in the world of granite and moonlight, climbing higher and higher, while the moon and

the stars moved slowly in the cloudless sky above us. In thinking of those hours they seem to fall more or less into four parts, a sort of Sierra symphony in four movements.

First was the part where the trail leads on and up through the great cirque or amphitheatre. There were ridges and peaks all about, forming interesting skylines but not hemming us in. It was a high, open, spacious sort of place. Sometimes we'd see far above or below tiny pinpoints of light that were the flashlights of our fellow climbers. Although we seldom needed our lights and got along better without them, we'd flash them on occasionally for a moment, and apparently the others were doing the same. Those were cheerful lights, the ones above indicating where the trail went, the ones below indicating how far we'd come. Gradually we rose above the still dark lakes, and what had been our skylines down below. We were getting up now, no doubt about it.

Another light that we'd see from time to time practically all the way to the top was a campfire, presumably our own down at Sierra Creek. We wondered how it happened to be burning all night. It was pleasant to picture the camp down there among the trees: that certain atmosphere and glow of a big campfire after practically everyone has gone off to bed and the fire burns on through the night, casting its quiet warm light on the branches of the trees; darkness around the commissary, with perhaps a few coals still glowing under a kettle or two; moonlight on the meadows and the pine trees and the stream.

Next came something quite different, the fascinating part of the trail that goes around among the pinnacles. What strange spires, what weird forms rising all about us. What an exciting place any time; what an enchanting place in the moonlight! It was somewhere in this general part of the trip when we suddenly felt the faintest touch of cold wind. Up to that moment it had been perfectly still and just pleasantly cold. This was something different, the entrance of a theme heretofore merely suggested. From then on the wind became steadily colder and colder as we climbed higher and higher, reaching its climax on the summit. It was also in this general part of the trip that we found the first polemonium, then more and more of it. Bright as the moonlight was, however, polemonium was little more than another clump of something growing until the additional light of a flashlight someone was carrying revealed its fluffy blue blossoms, its graceful green foliage.

But now we were beginning to wonder what was happening over on the east side. Hours had passed, and dawn couldn't be far away. As we looked about us and out over the mountains to the west it was still night and full

moonlight. But wasn't the sky up to the right just a bit lighter? And what about our shadows? A fellow climber had remarked, as he passed us on the trail, that there would come a moment when the light from the east would be exactly equal to the light from the moon and then we wouldn't have any shadows. We looked for them now. They were still there, but we wondered if they were quite as distinct as they had been before. Another theme that had been running quietly but persistently through the whole trip, continually urging us on, now became more insistent: could we reach the summit by sunrise? We pressed on.

Then all at once came that unforgettable moment—and this was where the next part came in—when we suddenly found ourselves looking out through the first window with its astounding, breathtaking view down the east side. The valley was eleven thousand feet below. Most startling of all, however, was the strip of glowing red sky, fading into orange and yellow, above the eastern horizon. We had hoped to be on the summit by this time. Still, if we had been, as some of the party were, we'd have missed this dramatic view through the first window. Wasn't it really better this way? But now it would be a race to see who reached the summit first, the sun's rays or the mountaineers. We must hurry on, but not too soon. This was something to remember: the way the mountain dropped off below us; the dim early morning light on the rock of the chimney; the valley and mountains beyond it deep blue in night; the tiny cluster of lights that was Lone Pine; the color of the sky; the contrast, so striking at this point, between the mountain world on the one hand and the desert world on the other, between the feeling of night on the west side and of morning on the east side. Then too, for all the spectacular qualities of the scene, there was something completely and utterly unpretentious about it, a wonderful satisfying naturalness and quietness.

As we passed each window after that the eastern sky was brighter and there was more light on the spires rising above the openings. Then we'd go back into the moonlit world. As we approached the last window there was so much light on the spire that we were sure we'd see the sun when we reached it, but we didn't. Only the lighter eastern sky, the darkness of the valley, the little lights of Lone Pine.

Then came another distinctive part of the trip, the summit. It began with that last long drag. We tried to go faster but simply couldn't at that altitude. We passed a snowfield. There was ice on the trail at one place. But at last someone ahead was on the skyline, and soon we were on the final rock slabs just below the summit. Had we made it? We looked out over the east side. The sun was a round fiery ball coming over the skyline. The first rays got

there ahead of us. But no matter. It was the end of the moonlight climb, it was the top of the United States, it was the top of the "Range of Light," and it was sunrise! It was also something else.

If Professor Langley, after selecting Mount Whitney (quoting Mr. Farquhar) "as the site for conducting observations to determine the amount and quality of the heat sent to the earth by the sun," had confined his stay on the summit to a sunrise hour, as we did, I think he might well have been justified in concluding that the amount of solar heat was, after all, so nearly infinitesimal as to be scarcely worth measuring. Yes, now more than ever it was cold. It was bitterly, fiercely cold, and the wind cut through parkas and jackets as if they had been sieves. Someone said the thermometer registered thirty degrees, but the wind made it seem even colder, so much so in fact that it would have been a bit difficult at times for some of us to remember what we'd come up for, anyhow, if it hadn't been for the campfire over by the hut.

How grateful we were for that fire! Someone had gone up on horseback the afternoon before and taken a pack of wood, and almost everyone had carried up a few pieces from timberline. It all added up to a little fire that will long be remembered as the only warm thing on the summit, even if the wind did swirl smoke in all directions at once.

As one stood by the fire it was interesting to note that the members of the party, many of whom had reached the top long before, were in various states of activity. Some were lying fast asleep in a sort of rocky hollow, stretched out flat, with just the tops of their heads sticking out of warm-looking sleeping bags. Not a bad idea, taking along your sleeping bag. Even if you didn't lie down and go to sleep in it you could drape it about the body, as some were demonstrating, thus creating a stunning effect while providing additional warmth. At the other extreme were those who seemed not unduly tired, sleepy, or cold. They'd stand there scanning the landscape, looking through their binoculars, pointing in various directions, calling off the peaks.

Others of us were in about an average state. We'd stay by the fire for a while, then go out in the wind and look at things for a while. And what things as were there to be seen, what matchless views of the Sierra, north, south, and west, what magnificent views of the east side, what mountains and passes and divides and canyons and lakes to be identified! Not only were there all these superb summit sights, but there were also all the special sunrise excitements, such as watching the various peaks light up as the first rays of the sun touched them.

Then there was the strange effect over to the west. All along the western

horizon, just above the skyline, was a narrow and clearly defined strip of sky that appeared lighter, clearer, than the sky above the strip. Yet there seemed to be no clouds, no fog, no mist. It is difficult to describe, but the strip of sky and the sky above the strip were somehow different, the light was different. Then directly in front of us on the horizon, as we stood with our backs to the sun, was a pyramid—the shadow of Whitney, we were informed. Or was it? Someone waved his arms, but no change or motion was visible on the pyramid shadow. After all, what's a mere arm waving alongside of Whitney.

Of course we wanted to inspect the hut while we were there. Unfortunately the door had blown down and there was a lot of snow inside. It was even colder in there than it was outside, so we didn't linger. Then, as was to be expected, there were several in the party who still hadn't had enough excitement, so off they went to climb Mount Muir.

Well, I guess that pretty well covers the trip—except that we came down of course, and saw everything by sunlight that we'd seen by moonlight. After we got well down off the summit and out of the cold wind we began to get warm, then very sleepy; so sleepy in fact that we actually dozed off several times while walking along the trail. But one good look at Whitney dropping off below would always bring us out of it in a hurry. Then too, we began to see the most beautiful polemonium, now completely revealed in all its loveliness of color, form, and setting in the bright morning light.

It would have been pleasant to be back in camp in time for hotcakes, and perhaps some of the party were; but that was not to be for us. However, we were perfectly satisfied to lie down in the warm sunshine under the clear blue sky in a beautiful little alpine meadow and eat what we had in our lunch bags. Then a few more hours on the trail, and we were back in camp in our sleeping bags, where we could look up and see the pine needles shining in the sun, then close our eyes and dream about Mount Whitney, grand old mountain, with its spires and pinnacles and chimneys and windows, its views, its history and tradition. Long may it rise in majesty above a glorious unspoiled wilderness. May many happy climbers stand upon its windswept summit. May many happy hearts rejoice in the range of light from Mount Whitney.

The West Against Itself

By BERNARD DeVOTO

[*We are indebted to the editors of* Harper's *for their permission to reprint here some excerpts from articles first published in that magazine. In presenting the De Voto articles,* Harper's *has demonstrated editorial leadership that brings happily to mind the alliance of John Muir with Robert Underwood Johnson of the old* Century Magazine*—an alliance which contributed immeasurably to wise use of the public lands in general, and specifically to the creation in 1890 of Yosemite National Park.* Ed.]

IN Harper's for August 1934, I called the West "the plundered province." The phrase has proved so useful to Western writers and orators that it has superseded various phrases which through generations of Western resentment designated the same thing. We must realize that it does designate a thing; that, whatever the phrases, there is a reality behind them. Economically the West has always been a province of the East and it has always been plundered.

The first wealth produced in the West was furs, mainly beaver furs. It made a good many Easterners rich. Partnerships and corporations sent technical specialists—trappers and Indian traders—into the West to bring out the furs.... They cleaned up and by 1840 they had cleaned the West out. A century later, beaver has not yet come back....

The development of the mineral West began in 1849. Mining is the type-example of Western exploitation.... Mining is liquidation. You clean out the deposit, exhaust the lode, and move on. Hundreds of ghost towns in the West, and hundreds of more pathetic towns where a little human life lingers on after economic death, signalize this inexorable fact. You clean up and get out—and you don't give a damn, especially if you are a stockholder in the East....

So we come to the business which created the West's most powerful illusion about itself and, though this is not immediately apparent, has done more damage to the West than any other. The cattle business....

The cattlemen came from elsewhere into the empty West.... They thought of themselves as Westerners and they did live in the West, but they were the enemies of everyone else who lived there. They kept sheepmen, their natural and eventual allies, out of the West wherever and as long as they could, slaughtering herds and frequently herdsmen. They did their utmost to keep the nester—the farmer, the actual settler, the man who

could create local and permanent wealth—out of the West and to terrorize or bankrupt him where he could not be kept out. And the big cattlemen squeezed out the little ones wherever possible, grabbing the water rights, foreclosing small holdings, frequently hiring gunmen to murder them....

Two facts about the cattle business have priority over all the rest. First, the Cattle Kingdom never did own more than a minute fraction of one per cent of the range it grazed: it was national domain, it belonged to the people of the United States. They do not own the range now: mostly it belongs to you and me, and since the fees they pay for using public land are much smaller than those they pay for using private land, those fees are in effect one of a number of subsidies we pay them. But they always acted as if they owned the public range and act so now; they convinced themselves that it belonged to them and now believe it does; and they are trying to take title to it. Second, the cattle business does not have to be conducted as liquidation but throughout history its management has always tended to conduct it on that basis....

The Cattle Kingdom overgrazed the range so drastically—fed so many more cattle than the range could support without damage—that the processes of nature were disrupted. Since those high and far-off days the range has never been capable of supporting anything like the number of cattle it could have supported if the cattle barons had not maimed it. It never will be capable of supporting a proper number again during the geological epoch in which civilization exists....

There remains lumbering. It perpetrated greater frauds against the people of the United States than any other Western business—and that is a superlative of cosmic size. It was a business of total liquidation: when a tree is cut, a century or two centuries may be required to grow another one and perhaps another one cannot be grown at all.... The effects of denuding a forest extend as far as fire may go and beyond that as far as any of the streams on the watershed it belongs to may be used for human purposes or are capable of affecting life, property, or society.

Lumbering, however, shows several deviations from the Western pattern. First, though a greater part of the timber came into Eastern ownership,... an important fraction of it came into the hands of Westerners. Second, the national government got on the job in time to protect vast areas of forest from liquidation—and to protect the heart of the West from geological extinction. Third, a good many of the big operators got the idea in time and it is mainly they who are now trying to maintain privately owned Western forests as a permanent source of wealth, whereas the drive to liquidate all forests comes most vociferously from small operators, who

have neither the capital nor the timber reserves for long-term operation....

These then, with power and irrigation which we may skip for the moment, are the businesses founded on the West's natural resources....

New Deal measures slowed the liquidation of resources and substituted measures of permanent yield. They operated to rehabilitate depleted resources, halt and repair erosion, rebuild soil, and restore areas of social decay.... The West greeted these measures characteristically: demanding more and more of them, demanding further government help in taking advantage of them, furiously denouncing the government for paternalism, and trying to avoid all regulation....

The West with its hat held out beseeching the expenditure on its behalf of federal money.... You can hardly find an editorial page in the West that is not demanding as Western right, as compensation for the West, and as assistance toward Western liberation, the expenditure of more federal funds. More government money... the improvement of Western agriculture, the replenishment of soils, the instruction of farmers;... the improvement of stock and range, quarantine, research; for fire protection in the logging business; for drainage; for reseeding and reforestation of private lands; for roads; for weather service; and always for dams, canals, and the whole program of reclamation. But at the same time: hands off....

The second column of the editorial page is sure to be a ringing demand for the government to get out of business, to stop impeding initiative, to break the shackles of regulation with which it has fettered enterprise, to abjure its philosophy of suppressing liberty, and to stop giving money to people who will only fill the bathtub with coal....

It shakes down to a platform: get out and give us more money.... It reveals the West's attitude toward the federal intervention which alone was powerful enough to save Western natural resources from total control and quick liquidation by the absentee Eastern ownership. For that preservation the West is grateful to the government. But there was and still is a fundamental defect: federal intervention has also preserved those resources from locally owned liquidation by the West itself. So, at the very moment *when the West is blueprinting an economy which must be based on the sustained, permanent use of its natural resources,* it is also conducting an assault on those resources with the simple objective of liquidating them.... The West as its own worst enemy. The West committing suicide....

The main objectives of the Western assault on the natural resources are the remnants of the national domain, the Taylor Act grazing lands, and the national forests. I have heard this assault called a conspiracy but it is in no way secret or even surreptitious; it is open and enthusiastically sup-

ported by many Westerners, by many Western newspapers, and by almost all the Western specialty press. Openly engaged in it are parts of the lumber industry (though other important parts of that industry are opposing it), some water users (though water users would be its first victims), the national associations of cattle and sheep growers and an overwhelming majority of the state and local associations as such and of their members individually, large parts of the mining industry, the U. S. Chamber of Commerce (some of whose local chambers are in opposition)....

Right now the stockmen and woolgrowers are carrying the ball.... Their limited objectives are:

1. Conversion of the privilege which cattlemen and sheepmen now have of grazing their stock on Taylor Act and Forest Service lands—a privilege which is now subject to regulation and adjustment and for which they pay less than it is worth—into a vested right guaranteed them and subject to only such regulation as they may impose upon themselves.

2. Distribution of all the Taylor Act grazing lands, which is to say practically all the public domain that still exists, to the individual states, as a preliminary to disposing of them by private sale. (At an insignificant price.... The price most commonly suggested was ten cents an acre.)

3. Reclassification of lands in the national forests and removal from the jurisdiction of the Forest Service of all lands that can be classified as primarily valuable for grazing, so that these lands may be transferred to the states and eventually sold. Immediately in contemplation is the removal of all government regulation of grazing in about 27,000,000 acres of forest lands and their distribution to the states—and to stockmen and woolgrowers as soon thereafter as possible....

But that is just a start: a further objective is to wrest from Forest Service control all lands in all forests that can be grazed. And beyond that is the intention ultimately to confine the Forest Service to the rehabilitation of land which lumbermen and stockmen have made unproductive, under compulsion to return it to private ownership as soon as it has been made productive again. The ultimate objective, that is, is to liquidate all public ownership of grazing land and forest land in the United States....

The immediate objectives make this attempt one of the biggest land grabs in American history. The ultimate objectives make it incomparably the biggest....

This is your land we are talking about....

The attack has already carried important outposts. Regulation of the use of Taylor Act lands, the vast public range outside the national forests, was vested in the Grazing Service. That service has been so systematically re-

duced in staff and appropriations that some cattlemen and sheepmen are now grazing the public range just about as they see fit. Violation of the Taylor Act is widespread, flagrant, systematic, and frequently recommended to their members as policy by various local cattle and sheep associations...

The Robertson Bill (S. 1945 introduced but not passed in the last Congress) would transfer to thirteen Western states all unappropriated and unreserved lands (including the minerals in them); all oil and mineral reserves; all minerals, coal, oil, and gas and all rights related to them in the public lands; and all homestead lands that have been forfeited to the United States. It would empower the states to dispose of these lands as they might see fit....

The guts of the bill, however, are the provisions which set up in each state a commission ordered to reëxamine every kind of reservation of public land—national forests, national parks and monuments, Carey Act (irrigation district) withdrawals, wildlife reserves, *reclamation reserves*, power sites, and certain less important ones. The commission's duty would be to determine whether parts of the national forests in its state are more valuable for grazing and agriculture (practically no Forest Service land can be farmed at all) than for timber production, and if it should decide that any were, to certify them for transfer to the state—that is, the commission is intended to get forest grazing land into private ownership....

The Robertson Bill is both transparent and carnivorous. It would liquidate the public lands and end our sixty years of conservation of the national resources. And this single bill would achieve all the main objectives of the whole program of the Western despoilers at one step, except that purely timber lands in the forests would still be protected and would have to be attacked by other means....

The public lands are first to be transferred to the states on the fully justified assumption that if there should be a state government not wholly compliant to the desires of stock growers, it could be pressured into compliance. The intention is to free them of all regulation except such as stock growers might impose upon themselves. Nothing in history suggests... that cattlemen and sheepmen are capable of regulating themselves even for their own benefit, still less the public's. And the regulations immediately to be got rid of are those by which the government has been trying to prevent overgrazing of the public range....

If Noah's flood occurred in Mesopotamia, as some have believed, overgrazing and overcutting were responsible for it.... More striking because nearer to us is what happened to the great central plateau of Spain... the

famous merino sheep were developed there. During the thirteenth century, the owners of migratory flocks organized associations strikingly like those of cattlemen and sheepmen in the West today and began to demand privileges at the expense of other interests in Spain. The master-association was chartered in 1273 as the Honrado Concejo de la Mesta.... The bulk of the Mesta's members were small operators but leadership was exercised by the big-shots...."It... claimed and gradually won exemption from the jurisdiction of local authorities and ordinary courts." (Garrett Mattingly.)

The Mesta was an effective pressure group and the repeated protests of agricultural Spain against the privileges granted it were quite unavailing. The crown found the Mesta a reliable source of tax revenue and such a source became indispensable as the imperial expansion moved across the Americas. So the crown granted it privileges and immunities—very much like those now sought by Western stock growers—that in turn helped to destroy the empire. It received "the right to pasture en route in all unfenced fields and in fallows, fenced or not" and the "right of pasture in all fields in which crops were not actually standing." Its herders had the habit of stripping young trees to supplement grazing and of burning off woodland in the fall so as to have more spring pasture. Both these practices became legal.

As early as the time of Charles V this privileged class had done irrevocable damage.... By the end of his reign, "agriculture was definitely declining throughout Castile," irrigation systems necessary in this semiarid land were growing ineffective, and agricultural land was deteriorating. Philip II clearly understood that the sheep had fundamentally impaired the national economy—and before the end of his reign the great flocks themselves were beginning to decrease. The inevitable had happened: overgrazing had cut down forage and the land would not support so many sheep. "... Castile was becoming the desert which it has largely remained ever since."...

In the words of L. Martin Echeverria, "destruction of timber and soil cover has turned much of Spain into a man-made desert." Destruction of timber and soil cover made the seat of Mesopotamian civilization a desert. They can make the modern West a desert....

Everyone knows that the timber of the United States is being cut faster than replacements are being grown, that the best efforts of the government and of those private operators who realize that other generations will follow ours have not so far sufficed to balance the growth of saw timber with logging. Everyone knows that regulation of grazing is the only hope of preserving the range. Open the public reserves of timber, the national

forests, to private operation without government restriction and not only the Western but the national resources would rapidly disintegrate.... Turn the public range over to private ownership, or even private management, and within a generation the range would be exhausted beyond hope of repair.

But that is, by a good deal, the least of it. Most of the fundamental watersheds of the West lie within the boundaries of the Taylor Act lands, the national forests, and the national parks. And overgrazing the range and liquidating the forests destroys the watersheds. In many places in the West today property in land, irrigating systems, and crops is steadily deteriorating because the best efforts of the government to repair damage to watersheds—damage caused by overgrazing the ranges and overcutting the forests—has not been enough....

There you have it. A few groups of Western interests, so small numerically as to constitute a minute fraction of the West, are hellbent on destroying the West. They are stronger than they would otherwise be because they are skillfully manipulating in their support sentiments that have always been powerful in the West—the home rule which means basically that we want federal help without federal regulation.... They have managed to line up behind them many Western interests that would perish by their success. And they count on the inevitable postwar reaction against government regulation to put their program over....

... if the watersheds go, and they will go if cattlemen and sheepmen are allowed to get rid of government regulation of grazing, the West will go too—farms, ranches, towns, cities, irrigating systems, power plants, business in general. Much of the interior West will become uninhabitable, far more will be permanently depressed. The United States cannot afford to let that happen—you cannot afford to....

(Note: Bernard DeVoto is a western man, born in Ogden, Utah, who loves the American West so much that when he spanks it, it hurts him more than it does the West. Because of his background and wide experience in the West he is one of the few writers who is read with equal attention by those who do and those who do not agree with him. He is a contributor to *Life, Fortune, Collier's* and other national publications, and the author of numerous well known books, among which are "The Taming of the Frontier," the "Year of Decision," and a new book "Mountain Time" now in press. He has been editor of The Easy Chair, *Harper's* magazine, since 1935.)

The Problems of the Wilderness

By ROBERT MARSHALL*

[Of the late Robert Marshall, forester, crusader, and inaugurator of the wilderness-area concept, F. A. Silcox wrote when he was Chief Forester, "No man ever rode the crest of the wave of life with higher purpose or more joyousness. [He] chose mainly those activities which would help to make life better for those who need a hand or would preserve the quality of naturalness of some of our wild land.... He was as passionately devoted to the development of organization camps for outings for the underprivileged children as to the preservation of wildernesses.... He was 'Bob' to hosts—from Justices of the Supreme Court to his beloved friends of the Arctic. Surely no man ever had more friends."]

IT is appalling to reflect how much useless energy has been expended in arguments which would have been inconceivable had the terminology been defined. In order to avoid such futile controversy I shall undertake at the start to delimit the meaning of the principal term with which this paper is concerned. According to Dr. Johnson a wilderness is "a tract of solitude and savageness," a definition more poetic than explicit. Modern lexicographers do better with "a tract of land, whether a forest or a wide barren plain, uncultivated and uninhabited by human beings."[1] This definition gives a rather good foundation, but it still leaves a penumbra of partially shaded connotation.

For the ensuing discussion I shall use the word wilderness to denote a region which contains no permanent inhabitants, possesses no possibility of conveyance by any mechanical means and is sufficiently spacious that a person in crossing it must have the experience of sleeping out. The dominant attributes of such an area are: first, that it requires anyone who exists in it to depend exclusively on his own effort for survival; and second, that it preserves as nearly as possible the primitive environment. This means that all roads, power transportation, and settlements are barred. But trails and temporary shelters, which were common long before the advent of the white race, are entirely permissible.

When Columbus effected his immortal debarkation, he touched upon a wilderness which embraced virtually a hemisphere. The philosophy that progress is proportional to the amount of alteration imposed upon nature never seemed to have occurred to the Indians.

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Even such tribes as the Incas, Aztecs, and Pueblos made few changes in the environment in which they were born. "The land and all that it bore they treated with consideration; not attempting to improve it, they never desecrated it."[3] Consequently, over billions of acres the aboriginal wanderers still spun out their peripatetic careers, the wild animals still browsed in unmolested meadows and the forests still grew and moldered and grew again precisely as they had done for undeterminable centuries.

It was not until the settlement of Jamestown in 1607 that there appeared the germ for that unabated disruption of natural conditions which has characterized all subsequent American history. At first expansion was very slow. The most intrepid seldom advanced farther from their neighbors than the next drainage. At the time of the Revolution the zone of civilization was still practically confined to a narrow belt lying between the Atlantic Ocean and the Appalachian valleys. But a quarter of a century later, when the Louisiana Purchase was consummated, the outposts of civilization had reached the Mississippi, and there were foci of colonization in half a dozen localities west of the Appalachians, though the unbroken line of the frontier was east of the mountains.[3]

It was yet possible as recently as 1804 and 1805 for the Lewis and Clark Expedition to cross two-thirds of a continent without seeing any culture more advanced than that of the Middle Stone Age. The only routes of travel were the uncharted rivers and the almost impassable Indian trails. And continually the expedition was breaking upon some "truly magnificent and sublimely grand object, which has from the commencement of time been concealed from the view of civilized man."[4]

This exploration inaugurated a century of constantly accelerating emigration such as the world had never known. Throughout this frenzied period the only serious thought ever devoted to the wilderness was how it might be demolished. To the pioneers pushing westward it was an enemy of diabolical cruelty and danger, standing as the great obstacle to industry and development. Since these seemed to constitute the essentials for felicity, the obvious step was to excoriate the devil which interfered. And so the path of empire proceeded to substitute for the undisturbed seclusion of nature the conquering accomplishments of man. Highways wound up valleys which had known only the footsteps of the wild animals; neatly planted gardens and orchards replaced the tangled confusion of the primeval forest; factories belched up great clouds of smoke where for centuries trees had transpired toward the sky, and the ground-cover of fresh sorrel and twin-flower was transformed to asphalt spotted with chewing gum, coal dust, and gasoline.

Today there remain less than twenty wilderness areas of a million acres, and annually even these shrunken remnants of an undefiled continent are being despoiled. Aldo Leopold has truly said:

"The day is almost upon us when canoe travel will consist of paddling up the noisy wake of a motor launch and portaging through the backyard of a summer cottage. When that day comes canoe travel will be dead, and dead too will be a part of our Americanism. . . . The day is almost upon us when a pack train will be dead, the diamond hitch will be merely a rope, and Kit Carson and Jim Bridger will be names in a history lesson."[3]

Within the next few years the fate of the wilderness must be decided. This is a problem to be settled by deliberate rationality and not by personal prejudice. Fundamentally, the question is one of balancing the total happiness which will be obtainable if the few undesecrated areas are perpetuated against that which will prevail if they are destroyed. For this purpose it will be necessary: first, to consider the extraordinary benefits of the wilderness; second, to enumerate the drawbacks to undeveloped areas; third, to valuate the relative importance of these conflicting factors, and finally, to formulate a plan of action.

I

The benefits which accrue from the wilderness may be separated into three broad divisions: the physical, the mental, and the esthetic.

Most obvious in the first category is the contribution which the wilderness makes to health. This involves something more than pure air and quiet, which are also attainable in almost any rural situation. But toting a fifty-pound pack over an abominable trail, snowshoeing across a blizzard-swept plateau, or scaling some jagged pinnacle which juts far above timber all develop a body distinguished by soundness, stamina, and élan unknown amid normal surroundings.

More than mere heartiness is the character of physical independence which can be nurtured only away from the coddling of civilization. In a true wilderness if a person is not qualified to satisfy all the requirements of existence, then he is bound to perish. As long as we prize individuality and competence it is imperative to provide the opportunity for complete self-sufficiency. This is inconceivable under the effete superstructure of urbanity; it demands the harsh environment of untrammelled expanses.

Closely allied is the longing for physical exploration which bursts through all the chains with which society fetters it. Thus we find Lindbergh, Amundsen, Byrd gaily daring the unknown, partly to increase knowledge, but largely to satisfy the craving for adventure. Adventure,

whether physical or mental, implies breaking into unpenetrated ground, venturing beyond the boundary of normal aptitude, extending oneself to the limit of capacity, courageously facing peril. Life without the chance for such exertions would be for many persons a dreary game, scarcely bearable in its horrible banality.

It is true that certain people of great erudition "come inevitably to feel that if life has any value at all, then that value comes in thought,"[8] and so they regard mere physical pleasures as puerile inconsequences. But there are others, perfectly capable of comprehending relativity and the quantum theory, who find ecstasy in nonintellectual adventure. It is entirely irrelevant which viewpoint is correct; each is applicable to whoever entertains it. The important consideration is that both groups are entitled to indulge their penchant, and in the second instance this is scarcely possible without the freedom of the wilderness.

One of the greatest advantages of the wilderness is its incentive to independent cogitation. This is partly a reflection of physical stimulation, but more inherently due to the fact that original ideas require an objectivity and perspective seldom possible in the distracting propinquity of one's fellow men. It is necessary to "have gone behind the world of humanity, seen its institutions like toadstools by the wayside."[9] This theorizing is justified empirically by the number of America's most virile minds, including Thomas Jefferson, Henry Thoreau, Louis Agassiz, Herman Melville, Mark Twain, John Muir and William James, who have felt the compulsion of periodical retirements into the solitudes. Withdrawn from the contaminating notions of their neighbors, these thinkers have been able to meditate, unprejudiced by the immuring civilization.

Another mental value of an opposite sort is concerned not with incitement but with repose. In a civilization which requires most lives to be passed amid inordinate dissonance, pressure, and intrusion, the chance of retiring now and then to the quietude and privacy of sylvan haunts becomes for some people a psychic necessity. It is only the possibility of convalescing in the wilderness which saves them from being destroyed by the terrible neural tension of modern existence.

There is also a psychological bearing of the wilderness which affects, in contrast to the minority who find it indispensable for relaxation, the whole of human kind. One of the most profound discoveries of psychology has been the demonstration of the terrific harm caused by suppressed desires. To most of mankind a very powerful desire is the appetite for adventure. But in an age of machinery only the extremely fortunate have any occasion to satiate this hankering, except vicariously. As a result people be-

come so choked by the monotony of their lives that they are readily amenable to the suggestion of any lurid diversion. Especially in battle, they imagine, will be found the glorious romance of futile dreams. And so they endorse war with enthusiasm and march away to stirring music, only to find their adventure a chimera, and the whole world miserable. It is all tragically ridiculous, and yet there is a passion there which cannot be dismissed with a contemptuous reference to childish quixotism. William James has said that "militarism is the great preserver of ideals of hardihood, and human life with no use for hardihood would be contemptible."[8] The problem, as he points out, is to find a "moral equivalent of war," a peaceful stimulation for the hardihood and competence instigated in bloodshed. This equivalent may be realized if we make available to every one the harmless excitement of the wilderness. Bertrand Russell has skillfully amplified this idea in his essay on "Machines and the Emotions." He expresses the significant conclusion that "many men would cease to desire war if they had opportunities to risk their lives in Alpine climbing."[9] In examining the esthetic importance of the wilderness I will not engage in the unprofitable task of evaluating the preciousness of different sorts of beauty, as, for instance, whether an acronical view over the Grand Canyon is worth more than the Apollo of Praxiteles. For such a rating would always have to be based on a subjective standard, whereas the essential for any measure is impersonality. Instead of such useless metaphysics I shall call attention to several respects in which the undisputed beauty of the primeval, whatever its relative merit, is distinctly unique.

Of the myriad manifestations of beauty, only natural phenomena like the wilderness are detached from all temporal relationship. All the beauties in the creation or alteration of which man has played even the slightest rôle are firmly anchored in the historic stream. They are temples of Egypt, oratory of Rome, painting of the Renaissance or music of the Classicists. But in the wild places nothing is moored more closely than to geologic ages. The silent wanderer crawling up the rocky shore of the turbulent river could be a savage from some prehistoric epoch or a fugitive from twentieth century mechanization.

The sheer stupendousness of the wilderness gives it a quality of intangibility which is unknown in ordinary manifestations of ocular beauty. These are always very definite two or three dimensional objects which can be physically grasped and circumscribed in a few moments. But "the beauty that shimmers in the yellow afternoons of October, who ever could clutch it."[10] Anyone who has looked across a ghostly valley at midnight, when moonlight makes a formless silver unity out of the drifting fog, knows how

impossible it often is in nature to distinguish mass from hallucination. Anyone who has stood upon a lofty summit and gazed over an inchoate tangle of deep canyons and cragged mountains, of sunlit lakelets and black expanses of forest, has become aware of a certain giddy sensation that there are no distances, no measures, simply unrelated matter rising and falling without any analogy to the banal geometry of breadth, thickness and height. A fourth dimension of immensity is added which makes the location of some dim elevation outlined against the sunset as incommensurable to the figures of the topographer as life itself is to the quantitative table of elements which the analytic chemist proclaims to constitute vitality.

Because of its size the wilderness also has a physical ambiency about it which most forms of beauty lack. One looks from outside at works of art and architecture, listens from outside to music or poetry. But when one looks at and listens to the wilderness he is encompassed by his experience of beauty, lives in the midst of his esthetic universe.

A further peculiarity about the wilderness is that it exhibits a dynamic beauty. A Beethoven symphony or a Shakespearean drama, a landscape by Corot or a Gothic cathedral, once they are finished become virtually static. But the wilderness is in constant flux. A seed germinates, and a stunted seedling battles for decades against the dense shade of the virgin forest. Then some ancient tree blows down and the long-suppressed plant suddenly enters into the full vigor of delayed youth, grows rapidly from sapling to maturity, declines into the corky senility of many centuries, dropping millions of seeds to start a new forest upon the rotting debris of its own ancestors, and eventually topples over to admit the sunlight which ripens another woodland generation.

Another singular aspect of the wilderness is that it gratifies every one of the senses. There is unanimity in venerating the sights and sounds of the forest. But what are generally esteemed to be the minor senses should not be slighted. No one who has ever strolled in springtime through seas of blooming violets, or lain at night on boughs of fresh balsam, or walked across dank holms in early morning can omit odor from the joys of the primordial environment. No one who has felt the stiff wind of mountaintops or the softness of untrodden sphagnum will forget the exhilaration experienced through touch. "Nothing ever tastes as good as when it's cooked in the woods" is a trite tribute to another sense. Even equilibrium causes a blithe exultation during many a river crossing on tenuous foot log and many a perilous conquest of precipice.

Finally, it is well to reflect that the wilderness furnishes perhaps the best opportunity for pure esthetic enjoyment. This requires that beauty be ob-

served as a unity, and that for the brief duration of any pure esthetic experience the cognition of the observed object must completely fill the spectator's cosmos. There can be no extraneous thoughts—no question about the creator of the phenomenon, its structure, what it resembles or what vanity in the beholder it gratifies. "The purely esthetic observer has for the moment forgotten his own soul";[4] he has only one sensation left and that is exquisiteness. In the wilderness, with its entire freedom from the manifestations of human will, that perfect objectivity which is essential for pure esthetic rapture can probably be achieved more readily than among any other forms of beauty.

II

But the problem is not one-sided. Having discussed the tremendous benefits of the wilderness, it is now proper to ponder the disadvantages which uninhabited territory entails.

In the first place, there is the immoderate danger that a wilderness without developments for fire protection will sooner or later go up in smoke and down in ashes.

A second drawback is concerned with the direct economic loss. By locking up wilderness areas we as much as remove from the earth all the lumber, minerals, range land, water-power and agricultural possibilities which they contain. In the face of the tremendous demand for these resources it seems unpardonable to many to render nugatory this potential material wealth.

A third difficulty inherent in undeveloped districts is that they automatically preclude the bulk of the population from enjoying them. For it is admitted that at present only a minority of the genus Homo cares for wilderness recreation, and only a fraction of this minority possesses the requisite virility for the indulgence of this desire. Far more people can enjoy the woods by automobile. Far more would prefer to spend their vacations in luxurious summer hotels set on well-groomed lawns than in leaky, fly-infested shelters bundled away in the brush. Why then should this majority have to give up its rights?

III

As a result of these last considerations the irreplaceable values of the wilderness are generally ignored, and a fatalistic attitude is adopted in regard to the ultimate disappearance of all unmolested localities. It is my contention that this outlook is entirely unjustified, and that almost all the disadvantages of the wilderness can be minimized by forethought and some compromise.

The problem of protection dictates the elimination of undeveloped areas of great fire hazard. Furthermore, certain infringements on the concept of an unsullied wilderness will be unavoidable in almost all instances. Trails, telephone lines and lookout cabins will have to be constructed, for without such precaution most forests in the west would be gutted. But even with these improvements the basic primitive quality still exists: dependence on personal effort for survival.

Economic loss could be greatly reduced by reserving inaccessible and unproductive terrain. In as much as most of the highly valuable lands have already been exploited, it should be easy to confine a great share of the wilderness tracts to those lofty mountain regions where the possibility of material profit is unimportant. Under these circumstances it seems like the grossest illogicality for anyone to object to the withdrawal of a few million acres of low-grade timber for recreational purposes when one hundred million acres of potential forest lie devastated.[3] If one-tenth portion of this denuded land were put to its maximum productivity, it could grow more wood than all the proposed wilderness areas put together. Or if our forests, instead of attaining only 22 per cent of their possible production,[4] were made to yield up to capacity, we could refrain from using three-quarters of the timber in the country and still be better off than we are today.

The way to meet our commercial demands is not to thwart legitimate divertisement, but to eliminate the unmitigated evils of fire and destructive logging. It is time we appreciated that the real economic problem is to see how little land need be employed for timber production, so that the remainder of the forest may be devoted to those other vital uses incompatible with industrial exploitation.

Even if there should be an underproduction of timber, it is well to recall that it is much cheaper to import lumber for industry than to export people for pastime. The freight rate from Siberia is not nearly as high as the passenger rate to Switzerland.

What small financial loss ultimately results from the establishment of wilderness areas must be accepted as a fair price to pay for their unassessable preciousness. We spend about twenty-one billion dollars a year for entertainment of all sorts.[5] Compared with this there is no significance to the forfeiture of a couple of million dollars of annual income, which is all that our maximum wilderness requirements would involve. Think what an enormously greater sum New York City alone sacrifices in the maintenance of Central Park.

But the automobilists argue that a wilderness domain precludes the huge majority of recreation-seekers from deriving any amusement whatever from

it. This is almost as irrational as contending that because more people enjoy bathing than art exhibits therefore we should change our picture galleries into swimming pools. It is undeniable that the automobilist has more roads than he can cover in a lifetime. There are upward of 3,000,000[18] miles of public highways in the United States, traversing many of the finest scenic features in the nation. Nor would the votaries of the wilderness object to the construction of as many more miles in the vicinity of the old roads, where they would not be molesting the few remaining vestiges of the primeval. But when the motorists also demand for their particular diversion the insignificant wilderness residue, even Midas appears philanthropic.

"Such are the differences among human beings in their sources of pleasure, that unless there is a corresponding diversity in their modes of life, they neither obtain their fair share of happiness, nor grow up to the mental, moral and esthetic stature of which their nature is capable. Why then should tolerance extend only to tastes and modes of life which extort acquiescence by the multitude of their adherents?"[19]

It is of the utmost importance to concede the right of happiness also to people who find their delight in unaccustomed ways. This prerogative is valid even though its exercise may encroach slightly on the fun of the majority, for there is a point where an increase in the joy of the many causes a decrease in the joy of the few out of all proportion to the gain of the former. This has been fully recognized not only by such philosophers of democracy as Paine, Jefferson and Mill, but also in the practical administration of governments which spend prodigious sums of money to satisfy the expensive wants of only a fragment of the community. Public funds which could bring small additional happiness to the majority are diverted to support museums, art galleries, concerts, botanical gardens, menageries and golf links. While these, like wilderness areas, are open to the use of everyone, they are vital to only a fraction of the entire population. Nevertheless, they are almost universally approved, and the appropriations to maintain them are growing phenomenally.

IV

These steps of reasoning lead up to the conclusion that the preservation of a few samples of undeveloped territory is one of the most clamant issues before us today. Just a few years more of hesitation and the only trace of that wilderness which has exerted such a fundamental influence in moulding American character will lie in the musty pages of pioneer books and the mumbled memories of tottering antiquarians. To avoid this catastrophe demands immediate action.

A step in the right direction has already been initiated by the National Conference on Outdoor Recreation,[17] which has proposed twenty-one possible wilderness areas. Several of these have already been set aside in a tentative way by the Forest Service; others are undergoing more careful scrutiny. But this only represents the incipiency of what ought to be done.

A thorough study should forthwith be undertaken to determine the probable wilderness needs of the country. Of course, no precise reckoning could be attempted, but a radical calculation would be feasible. It ought to be radical for three reasons: because it is easy to convert a natural area to industrial or motor usage, impossible to do the reverse; because the population which covets wilderness recreation is rapidly enlarging; and because the higher standard of living which may be anticipated should give millions the economic power to gratify what is today merely a pathetic yearning. Once the estimate is formulated, immediate steps should be taken to establish enough tracts to insure everyone who hungers for it a generous opportunity of enjoying wilderness isolation.

To carry out this program it is exigent that all friends of the wilderness ideal should unite. If they do not present the urgency of their viewpoint the other side will certainly capture popular support. Then it will only be a few years until the last escape from society will be barricaded. If that day arrives there will be countless souls born to live in strangulation, countless human beings who will be crushed under the artificial edifice raised by man. There is just one hope of repulsing the tyrannical ambition of civilization to conquer every niche on the whole earth. That hope is the organization of spirited people who will fight for the freedom of the wilderness.

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[1]Webster's New International Dictionary.
[2]Willa Cather, "Death Comes for the Archbishop."
[3]Frederic L. Paxson, "History of the American Frontier."
[4]Reuben G. Thwaites, "Original Journals of the Lewis and Clark Expedition, 1804-1806," June 13, 1805.
[5]Aldo Leopold, "The Last Stand of the Wilderness," *American Forests and Forest Life*, October, 1925.
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Protecting Mountain Meadows

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SOMEWHERE close to the heart of every Sierra traveler there is a special meadow. It's the meadow in which he stopped to look at the canyon walls or to cast a fly upstream, the meadow near which he camped, or paused to rest and absorb mountain sunshine on some particularly auspicious occasion. Wherever the meadow, whatever the occasion, each Sierra traveler must soon realize that it is The Meadow which is the key to his enjoyment of whatever he seeks—climbing, fishing, or relaxing—in the Range of Light. For surely, some time during each of his Sierra days, he will need some of those things that only a meadow can give. But he can't have them, for many more years, unless something is done for the meadows. They are on their way out—well on their way.

Concern has been growing for years over the continuing deterioration of most of the finest High Sierra meadows under the heavy grazing by pack and saddle animals. Various members of the Sierra Club have devoted much thought to the problem, and have successfully put into effect certain practices designed to minimize the grazing damage that is associated with large parties. In 1941 and 1942, the National Park Service made extensive studies of meadow deterioration in Sequoia and Kings Canyon National Parks; however, the war prevented adoption of the proposed program of restoration.

Because of restricted travel during wartime, some High Sierra meadows recovered appreciably from grazing by tourist stock. The recovery was only superficial, however, being restricted to the weed and grass species that had taken possession of the meadows comparatively recently. The period of relief was too short to permit a return of the original vigorous growth of native grasses, or restoration of the porous, moist soil and of the ecological requirements that had produced the luxuriant meadows of earlier decades.

With the end of the war, California's greatly increased population broke all travel records for the national parks of the High Sierra, and the meadows were denuded again. The problem of restoration now is more urgent than ever because, despite the fact that the impact of visitor use promises to increase for years, techniques for checking meadow deterioration still remain to be put into general operation.

Sometimes it has been argued that the high mountain meadows are by

nature so transitory that the present general trend toward their disappearance should be regarded with no particular concern. Such a point of view overlooks the fact that overgrazing, which itself is unnatural, greatly accelerates the normal process of transition. Forest encroachment that might require five hundred years for completion under natural conditions is compressed by excessive grazing into a space of fifty years. Gully erosion, which might never occur at all in the normally slow transformation from meadow to forest, can gut a meadow and turn it into a sand flat in five years. This unnatural acceleration allows nature no time for her normal replacement program whereby new meadows are formed from the filling in of boggy lakes (as at Goat Mountain, Kings Canyon National Park) while the old meadows slowly turn into woodland flats.

Essentially, this replacement is a part of the natural process of conversion of glacial lakes. Since new meadows are thus formed so extremely slowly, the loss of existing meadows leaves the wilderness without sufficient meadow land in many areas to support the native wildlife and the heavily increasing recreational travel.

Degree of damage to meadows in the High Sierra and rate of disappearance are closely related to their strategic importance as stopping places. Therefore, the most vital meadows are now most endangered. Unfortunately, those meadows are usually at the lower elevations where conditions are drier and the transition from meadow to forest further advanced. There is thus far less chance of natural replacement of such meadows, and they are far more easily and permanently damaged.

In Sequoia National Park, Upper Funston, Junction, and Redwood Meadows receive particularly severe use, because no other stopping places are available to travelers in their vicinity. Similarly, in the Kings Canyon region, Scaffold, Junction, Vidette, Charlotte, Tent, Deer, Little Pete, Le Conte and Colby Meadows, as well as the meadows of Paradise Valley and Bullfrog Lake, receive terrific abuse because of their vital importance to through travel. Moraine Meadow and the forlorn remnant of a meadow at Pate Valley also illustrate this type of destruction in Yosemite National Park.

The first evidence of serious injury to a meadow usually is the appearance of bare areas, together with the replacement of the original grassy forage by patches of fern, and rank, unpalatable weeds. Tent Meadow is a good example of this stage of damage.

The breaking up of the protective mantle of meadow sod sets up a new chain of destructive events. Soon the thin layer of fertile top soil, so scarce at best in the High Sierra, is blown or washed from among the remaining

clumps of grass, and the underlying sand and gravel are laid bare. The sandy soil, no longer bound together and kept moist by the tightly interlaced grass rootlets, becomes dry, loose and favorable not only for the further spread of weeds, but also for the germination of seeds from the invading forest. Continued overgrazing further hastens this invasion, as the animals trample the seeds into the favorably prepared soil, and while continuing the attack on the weakened remnants of sod, simultaneously spare the less palatable weed and forest tree seedlings. The sand and gravel flats of Junction Meadow, Kings Canyon National Park, illustrate an advanced stage of sod removal accompanied by weed and brush replacement. At Deer Meadow, the heavy stands of lodgepole pine, intermingled with expiring stringers of grass, indicate a late stage of forest replacement.

Frequently, destruction of meadow sod results in stream channel erosion which lowers the watertable and dries out the meadow irrevocably. In Kings Canyon National Park, Williams Meadow exhibits a graduated series from early to moderately advanced stages of stream channel erosion, while the near-by Sugarloaf Meadow illustrates the final stages in the deterioration and disappearance of a mountain meadow. In fairness to users of pack and saddle stock, it should be added that the grazing that is destroying these two meadows, mentioned because they are unusually clear-cut examples, results primarily from lifetime cattle grazing permits dating from a period before the establishment of the national park. However, the only difference between the two kinds of grazing is one of relative severity.

A Protection Program

In the High Sierra the growing season for plants is greatly restricted by the long, cold winters, and by chilly nocturnal temperatures that prevail even in summer. Since the ability of the higher meadows to recover from grazing is correspondingly slow, the most effective solution of the problem would be to give them a complete rest for five or ten years. However, this would prevent the use of many wilderness areas altogether; therefore, the only alternative is to employ a carefully planned meadow conservation program.

Since all of the remedies described will not be equally applicable to a given area, each meadow should have an individual plan of treatment worked out. The need for securing real recovery in the face of continued use of the high country is so urgent that in numerous critical areas a meadow restoration program that will combine as many methods as possible is needed at once.

Fencing.—The strong tendency of pack and saddle animals to drift back to the home corral or to lower elevations during chilly nights has led to

the construction of many drift fences and trail bars in the high country. Drift fences require the minimum of materials and labor for construction because they take advantage of natural obstacles such as rockslides, cliffs, and dense thickets of brush. Therefore, it is possible to employ them in almost any program of meadow protection or rotation even when trail maintenance funds are limited. The entire fence can even be removed and placed in a new location, under a rotation program. In addition, this type of fence presents the least intrusion upon the wilderness atmosphere and the minimum collision hazard for wildlife.

Completely enclosed, permanent tourist pastures have been tried out quite extensively by the Forest Service, and have been used by the National Park Service at Upper Funston, Big Arroyo, and Hockett Meadows in Sequoia National Park. Because extensive fencing is needed, annual maintenance is considerable, particularly in regions of heavy snowfall. The substantial fences required are less easily removed under a rotation program, and overlong use is then encouraged. The pastures are necessarily confined to relatively small, often rather wet areas, thereby intensifying range destruction by concentrating the livestock.

To a degree, range damage is accentuated by fenced pastures. They are so convenient, and so effectively banish worry about drifting of stock, that tourists and even some of the packers persist in using them after the grass has been chewed and trampled to the vanishing point. Severe damage is commonly observed even when untouched forage grows luxuriantly just outside the fence. Small pastures like Vidette Meadow which, though not actually surrounded on all sides by wire, are effectively contained by drift fences, also belong in this category. Because of all these disadvantages, the general establishment of fenced tourist pastures is not recommended.

Trail Routes, Signs, and Maps.—Protection can also be afforded by additional administrative planning. Many spots are known to travelers where care has not been taken to route a trail around the edge of a meadow. The result has frequently been to cut a deep trench through the meadow which, by lowering the adjacent watertable, has caused damage to the meadow far beyond the actual ground area occupied by the trail. After gullying has started, stock will attempt to find other routes through the meadow, thus progressively spreading this type of damage.

Many fine meadows are damaged through overuse simply because parties do not know that better grazing is available near by. The meadows of Bullfrog Lake near Charlotte Meadows, and Paradise Valley near the Goat Mountain Meadows are examples in point. Simple signs at heavily used trail junctions would tend to spread the load over other meadows. Some-

times, however, it is not quite practicable to change one's itinerary at the last minute on the ground. It would be helpful if a green overprint could be made on existing topographic maps which would show grazing facilities. Starr's *Guide to the John Muir Trail* (3d edition, 1946) gives a great deal of information on available grazing along the trails of the High Sierra. Similar information should be made available for other areas.

Clearing Trees and Brush from Meadows.—Some visitors to the High Sierra who have observed the gradual invasion of meadows by trees and brush over a long period feel that clearing of the meadows would be justifiable as a restoration measure to compensate for grazing damage. Though this argument is not unreasonable, it should be emphasized that any meadow-clearing program must be definitely subservient to a prior program of reducing grazing below the damage threshold. Usually the trees and brush have invaded an area primarily because they could resist grazing and trampling better than grass. Therefore, removal of trees and brush would not itself bring back the grass, and even trees and brush would be more desirable than sand flats and bare gravel. After grazing has been brought under control and the grass has begun to resume its soil-binding and moisture-retaining functions, consideration might well be given to the gradual elimination of those lodgepoles and brush thickets whose date of origin falls within the period of known grazing damage. It must be remembered, however, that any interference with natural processes is highly questionable.

Restoration of Damaged Meadows.—At best, our mountain meadows are definitely limited in number and would gradually, though very slowly, change into drier forest areas through natural evolution. However, this slow process has become greatly accelerated by overuse which is unnatural. Some persons have, therefore, suggested that serious consideration should be given to positive efforts to restore some of the meadows that have prematurely reached old age. Of course, it is of foremost importance that every effort first be made to alleviate the conditions that bring about the destruction of the meadows. Nevertheless, on heavily traveled routes we cannot wholly prevent the gradual deterioration and loss of a meadow that, under natural conditions, would never have been subjected to the abuses that even minimum use by human visitors will produce. For such meadows, restoration seems no more "artificial," and involves no more "tampering" with the balance of nature than would the construction of trails that permit access to the country.

The Forest Service has restored the watertable in certain meadows by unobtrusive irrigation from local streams; however, this can be attended

by serious danger of erosion unless rigidly supervised. The method is worthy of careful consideration in a few far-gone meadows, although a preferable method would undoubtedly be the restoration of the original stream gradient by use of primitive check dams and live willow cuttings, as was successfully accomplished at Wawona Meadow in Yosemite.

The reseeding of meadows with native grasses and flowers has been urged at times, but would be futile until the proper soil and moisture conditions have been restored. When grazing is sufficiently reduced, natural reproduction usually is adequate; recovery of native species in wilderness areas is held in check, not so much by any dearth of seed as by unfavorable conditions associated with grazing that prevent reëstablishment by seed.

To provide better distribution of stock on some meadows, certain parts of the meadows could be easily made more accessible if routes were cleared through obstructing brush and rocks.

Commercial Grazing.—In many areas of the High Sierra, grazing is one of the valuable multiple uses of the forest. Unfortunately, however, it exists also in some areas that are considered to have a higher use for recreational travel. This is particularly true of some of the meadows at high altitudes in wilderness areas where the short growing season does not provide enough vegetation safely to care for commercial grazing and recreational pack stock too. As a result, hardly a meadow in the Sierra remains in its primitive state. The Sierra national parks were severely overgrazed by sheep for many years before national park protection was established. Unless active protective measures are taken now, the chance that these meadows will recover completely is slight; "recreational" grazing is perpetuating the damage wrought by sheep.

The few lower meadows that are remote from heavily traveled recreational routes usually are grazed to the maximum by commercial stock of the park operators. At least a few such remote meadows in the Sierra Nevada should be preserved from all grazing, for it is a tragedy that the gardens so eloquently described by Muir and other early writers are hardly to be found anywhere today.

Limitations on duration of stay.—At a few of the most strategically located High Sierra meadows, the Forest Service and National Park Service have been forced to establish a twenty-four hour stopover limit to retain any forage at all for later visitors. This restriction probably can be avoided at most meadows if a rotation system of use is established. However, Pate Valley, Paradise Valley, and both of the Junction Meadows, Charlotte, Woods, Le Conte, Upper Funston (where it is already in effect) and a few others require some such regulation as an alternative to extinction.

Limitation based on rotation.—A system of annual pasture rotation should be tried out for a few particularly overused meadows. At present the first or most accessible of a series of neighboring meadows is overgrazed while the others remain untouched. This is true with the group of meadows at Charlotte Lake and also in Evolution Valley. Informative signs and maps could do much to alleviate this type of overuse. After the meadows that now are most heavily damaged have had a complete rest, however, it may prove better to arrange the fencing so as to use all of a group simultaneously but lightly every year, instead of making each one of them bear in turn the entire load of a single season.

Itinerary planning for large parties.—The overuse of small, strategic meadows on arterial travel routes by large pack and saddle parties has been greatly reduced in recent years by careful itinerary planning so as to avoid such meadows. The Sierra Club has conducted annual outings every year since 1901, with the exception of five war years. In order to make such trips available to as many as possible who love the mountains, and to cut down the cost per person as well, fairly large groups have been taken. Great care in planning has been required to minimize the grazing damage that might be caused by such large parties.

To spare strategic meadows near roadheads, feed is brought in whenever local grazing is at all inadequate for the travel which it has to support. Back in the high country a night rider pushes the stock sometimes two or three miles from the frequently used meadow to grazing that is seldom touched. He is also able to spread the stock evenly wherever they are grazing and thus avoid the concentration that so often occurs near drift fences in the most accessible portion of the local grazing area.

Fortunately, the wilderness area of the Sierra Nevada is so large that the High Trip group can travel for four weeks each summer for six consecutive years before having to visit the same meadows again. Care is taken to see that the itinerary of the Sierra Club is made known nine or ten months ahead of the trip, so that coördinated plans can be worked out with other groups to avoid overconcentration of travel in a particular area. The Forest Service and the National Park Service are also consulted so that their plans for trail maintenance and their information about condition of grazing can be taken into account. If an informal custom could be established whereby all large parties would arrange advance clearance with the services, better usage of the mountains could result with an increase in pleasure for all. In spite of the tradition of hospitality upheld whenever strangers meet in the back country few parties like to arrive at a particularly fine spot deep in the wilderness and find it already occupied by another group,

particularly if the other party is fairly sizable. Advance knowledge of the itineraries of others will often permit a change in one's own itinerary to another area that is equally desirable.

The High Trips have the experience of forty-two years of packing to enable them to travel with the minimum number of stock per person. This is accomplished, in part, by a carefully planned itinerary that allows two layover days, on the average, for every moving day. This makes it possible to travel with only two days' food on the pack train at each move. During layover days the pack train is sent back to pick up a relay of supplies or forward to establish a cache at the new camp. Side trips over lateral passes are made to bring in fresh supplies of food, thus cutting down the number of stock required on the main trip. By these means the High Trip stock has for many years averaged one animal for every two people. Those familiar with travel in the mountains know of many trips on which ten times that number of stock, or five head per person, have been used. Before any conclusions are reached concerning the effect of large parties upon grazing it would seem that prime consideration should be given to the amount of natural forage per person that is consumed at critical points. It is felt that this has been reduced to a minimum on Sierra Club pack trips. It has been still further reduced by the introduction of burro trips which teach people to handle themselves and stock in the mountains, by knapsack trips which impose no appreciable burden on the meadows, and by base-camp trips which in 1946, for instance, permitted 280 man-weeks of enjoyment of the wilderness with only 17 animal-days of grazing.

Supply by air.—Advantage is already being taken of air access to parts of the High Sierra, to a limited degree. It has been suggested that if mountain parties, in addition to being flown in, were supplied by air as well, the meadow grazing lands would receive substantial protection. Air supply has been demonstrated to be practicable, whether for Alaskan mountaineering, combat, or for fire fighting in roadless areas. Undoubtedly, airborne supply would reduce the damage done by grazing, but it must be shown that this benefit will outweigh several serious objections before further intrusion of aircraft into wilderness areas is permitted.

The landing of planes in wilderness areas is so potentially destructive—whether accidental or intentional—that it should be prohibited. Conventional planes require large runways, the clearing of which would ruin many wilderness areas. Following the establishment of runways there would inevitably be various structures for the storage of supplies, for the maintenance and shelter of craft, and later for ground crews. The wilderness would only retreat from the airport, however crude it was. An aviator's

and air traveler's oasis is essential for proper use and development of arctic wastelands; it is inimical to the best use and preservation of wilderness areas cherished for their wildness.

Landings by such craft as helicopters or blimps, which can operate in high mountains only with difficulty, present no immediate problem, but the day when they are generally available and maneuverable in mountain areas must nevertheless be anticipated.

Whether planes land or merely fly over a wilderness, there are many minor objections to them. Wilderness travelers are disturbed by noise in the very wilds that are set aside to be a palliative to the city's cacaphony. There will be inevitable crashes, and an increased incidence of fires. Even if only a small segment of the population used planes, patrols equipped to prevent poaching and other violations in remote country would quite likely be still smaller. If no more than supplementary hay for animals were to be dropped, there would still be the certainty that with the feed would be introduced many seeds of undesirable, nonnative weeds.

There is a more serious danger. Perhaps the completely practical safeguard for wilderness has been that whatever was used there by the wilderness traveler (as well as the traveler himself) could get there only through some effort on his part. He carried it in or persuaded an animal to do the job for him. His impedimenta was thereby kept light—*light enough to be carried out again.* What he didn't carry out was expended, and nothing remained as evidence of his presence but his footprints on the trail. The wilderness remained fresh for the next traveler to discover and enjoy for himself. The proving exception to this generalization, of course, is the ubiquitous tin can. Wilderness tin-can dumps are already out of hand. One can easily imagine the multiplication of debris—tin cans and larger—that would result if tourists and supplies were easily brought in by air.

Supply Points.—The Sierra Club and National Park Service have studied a proposal to establish supply points at strategic trail junctions; these depots would tend to increase knapsacking and reduce the number of stock required by parties on long trips. Unfortunately, they would bring many difficult problems. First, further destruction of wilderness would result if permanent buildings were built in areas which would otherwise be totally wild. There is also a sizeable economic problem in maintaining such supply points, and it is difficult to convince travelers that the increased cost of staples over city prices is actually justified. If such supply points are very remote, the pack trains required to supply them will present almost as great a grazing problem as those of individual parties, with the exception that certain economies in grazing are possible for large parties.

Carrying Feed.—It has frequently been suggested that parties eventually may be required to carry feed with them. This might be possible for the first day or two out of a critical starting point, such as Kings Canyon. A two or three days' supply of feed would enable parties to get past the denuded meadows of Paradise Valley or Bubbs Creek and get back into more remote areas where the grazing problem is not *yet* quite so critical. This relief, however, probably would be only temporary and would simply push the critical areas further back into the wilderness. Moreover, the problem of introduction of foreign weeds would be increased. Another important difficulty was pretty clearly demonstrated in military operations: there is a definite point beyond which the animal will eat more feed than he can carry. It is usually not practical to rely on feed carried more than five days beyond a roadhead.

Saturation of the Wilderness

There is obviously a clear limit to the number of stock that mountain meadows can support. When the saturation point is passed, destruction of meadows is precipitated, more and more rapidly as the passing of each successive meadow adds to the concentration of grazing in the meadows which remain. Native wildlife passes with the meadows. Sustained yield, which must always be sought in man's use of natural resources, becomes no more than an abstract concept. We need more than just a concept if we are to continue to enjoy the natural resource of wilderness and its meadow heart-land. We need a comprehensive technique of use that will prevent oversaturation of wilderness and still enable people, in reasonable numbers, to enjoy that wilderness.

The act of Congress which established the National Park Service expressly provides that the parks are to be administered in such a manner that they will be passed on unimpaired to future generations. Essentially the same principle covers the Wilderness Areas of the Forest Service. If we wish to support this concept we must ask ourselves how far we of the present generation can go in using such wilderness areas and still maintain our responsibility to those who come after us. In the public lands administered by the two services there is all too little left of primeval Sierra country that is superlative and we are under deep obligation that the little we have is not irreparably damaged by overuse or misuse in our time.

STAGES IN THE BIRTH AND DEATH OF HIGH SIERRA MEADOWS

1. Early stage of meadow formation through the slow filling in of a mountain lake—Goat Mountain, Kings Canyon National Park.

2. Mature wet meadow, with normal life expectation of perhaps two hundred years but here showing first small premature invasion of forest trees as a result of intense grazing.—Williams Meadow, Kings Canyon National Park.

3. High Sierra meadow grass once looked like this, but such a sight is rare today. Moraine Meadow, Kings Canyon National Park where no grazing was allowed for five years.

4. Heavy grazing causes unpalatable weeds and forest trees to replace the original tall grasses. Vidette Meadow, Kings Canyon National Park.

5. As overgrazing continues, the grass roots are completely killed, leaving bare, dusty patches which are taken over by weeds, brush and forest trees. Tent Meadow, Kings Canyon National Park.

6. This brushy patch of sand is remembered by old-time Sierra Club members as a grassy meadow. Junction Meadow, Kings Canyon National Park.

7. Under natural conditions, erosion of meadows by water is almost negligible because the tough, interlacing grass roots bind the particles of soil securely. However, here the roots have been weakened by grazing and trampling, and the water has begun to cut a channel that will grow deeper. Williams Meadow.

8. As the grass roots die, the channel begins cutting through the soft, glacier-deposited soil. Waterfalls like this look harmless at first but soon they grow deeper, and continually work backward upstream until the once-level meadow is scarred by a deep trench. Williams Meadow.

9. The trench grows deeper, the banks cave and fall into the stream, to be washed away. The surrounding grassland begins to dry as the water table sinks, and the grass, already weakened by overgrazing, declines still more rapidly. Williams Meadow.

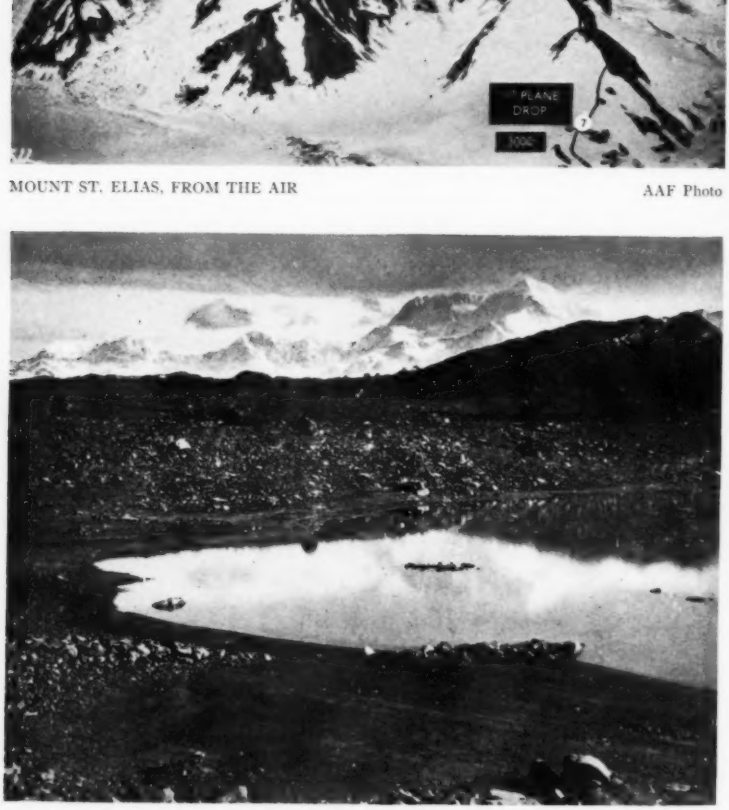
10. As the stream continues to deepen its channel the grass dies out and the trampled sand is exposed to wind and water erosion. Williams Meadow.

11. Once started, erosion damage runs in a vicious circle as the grass dies out over constantly widening areas and the stream channel, once just a wet seep on the meadow surface, cuts ever deeper. Boggy Meadow, Kings Canyon National Park.

12. At last the meadow dies. At this late stage, though grazing should be stopped, fifty years of total protection would not bring complete recovery. Photographs 1 through 12 by Lowell Sumner, courtesy National Park Service.

HEADING TOWARD SADDLE FROM HAYDEN PEAK By D. Molenaar

MOUNT ST. ELIAS, FROM THE AIR AAF Photo



THE MOUNTAIN, FROM ICY BAY By D. Molenaar

St. Elias: The First American Ascent

By DEE MOLENAAR

THE entire range stood out clearly in the Alaskan alpenglow as we made an evening reconnaissance flight over the coastal mountains. We could recognize Lucania, Steele, Bona, Logan, and many other summits, but it was Mount St. Elias that dominated our view as we headed directly toward its huge pyramidal mass. The sun was setting behind it and we flew in the mountain's spearhead shadow for several miles before we were over its slopes. Circling the 18,008-foot summit several times at different elevations, we returned to the village of Yakutat, well aware that this mountain would prove a worthy opponent.

Of course, we didn't need to scout from a C-47 to learn this, for we knew that St. Elias had been the object of six major mountaineering expeditions since 1886 and that five of them failed. The only ascent was made in 1897 after the Duke of Abruzzi and his party of Italian climbers had spent forty days on the ice. With the aid of one hundred porters—Indians from Yakutat—they reached the summit from the Canadian side.*

Traveling under the Harvard Mountaineering Club banner, and without porters, our self-financed party was composed of members of several climbing clubs who came from four corners of the country: Maynard Miller, of Seattle; Mr. and Mrs. Andrew J. Kauffman, of Washington, D. C.; William R. Latady, of Cambridge; William L. Putnam, of Springfield; Lieutenant Ben G. Ferris, of Weston, Massachusetts; and my brother, Cornelius "K" Molenaar and I, of Los Angeles, who were invited to join the party through a friendship with Maynard Miller, begun while we were all three working as guides during the prewar summers at Mount Rainier.

When the expedition was being planned, General Spaatz became interested in the problem of giving air support to an operation of this sort, and he directed Major Mosse, of the Tenth Rescue Squadron, in Anchorage, to drop supplies to us at three levels on the mountain. We, for our part, agreed to test variations in army rations and equipment, including tents, sleeping bags, and arctic clothing—no great sacrifice. Lieutenant Ferris, in the Army Medical Corps, came from the Harvard Fatigue Laboratory to study high-altitude physiology; he was also the army observer and our trip doctor.

Miller, K, and I had met in Seattle in April to gather, sort, box, and

*[This ascent is described in detail in the *Sierra Club Bulletin*, 2 (1898): 3, 129-148. Ed.]

ship the two tons of supplies sent from the East; and now, on June 6, after an Inside Passage voyage to Juneau and a 200-mile flight to Yakutat, our party and provisions were together for the first time, and our supply-dropping schedule and signals were arranged. By the evening of June 16th our air supplies, painted three different colors for the three drop areas, were safely at the airport, and the rest of our gear was in the hold of Tony Novatney's small fishing boat. We embarked, and after a rough night at sea reached Icy Bay, our jumping-off place.

Except for a narrow stretch of open water at one side, the bay's entire area was covered with ice blocks and slush. Consequently we had to make our landing five miles down the beach from the terminus of the Tyndall Glacier, where he had hoped to land. It took us three days of heavy packing under a constant drizzle to relay the ton and a half of supplies and equipment to the glacier. At one point we had to spend a day and a half roping our supplies and ourselves across a swollen glacial river. The highlight was Bill Latady's crossing, aquaplane style, on two army test sledges tied side by side.

The glacier itself was about three miles wide; our route along a narrow medial moraine, although highway-like on aerial photographs, was heavily crevassed and strewn with all manner of rocks, too few of them stable. Nevertheless, and in spite of intermittent spells of rain, fog, and hot sunshine, we reached the base of the mountain on the appointed day of June 27. We were twenty miles inland, had established our seventh camp, and were ready when the first air drop landed within the 100-yard square we had stamped out in a snowfield.

Camp 7 was in an oasis of alpine floral beauty. Several small, clear streams running through the heather gave an excellent water supply; birds flitted about and marmots whistled at us; ptarmigan were plentiful. We were reluctant to continue the climb, but the plane would make the second drop four days later, on July 1, and we had 7,000 feet in elevation to gain by then. High cirrus clouds which drifted in from the southwest told us that the drop might have to be delayed, but Miller, Putnam, and Latady decided to prepare for a possible break in the weather on that date and started up the ridge. The rest of the party would join them as soon as the drops had been made.

The expected storm came up, however, preventing any contact with the plane, and finally broke to reveal a mountain plastered with fresh snow. The plane then came in, made its circles and drops, and we immediately set out for the climb up the ridge to Camps 8 and 9. Spending the first night at Camp 8, we were awakened by the boisterous voices of Miller,

Putnam, and Latady, who, after taking in all the dropped supplies, had come down for a few days of well-earned rest in the heather. They delivered airmail to us as they passed by, and suggested that we make an early morning start for the ridge top above the cirque. They had encountered near tragedy in their mid-day ascent when an avalanche of sun-loosened snow swept a rock gully which they had just left a few minutes before.

Up at 2 A.M., we were soon climbing through the early dawn, and after some seven hours had reached the scene of the previous morning's drop and Camp 9. During their week there, the trio had solved their housing shortage—they had but one two-man tent—by building an igloo. Earlier in the trip Putnam and Ferris had combined their joint interests in building wayside cairns, filling in crevasses with boulders, and the like, into an organization which they named "Colossal Enterprises, Inc." This was merely one more in their line of achievements. The pace at which we had all been traveling in order to meet the first two drops was too fast, so the trio, adding sign-making to the enterprises, had stamped out huge letters in the snowfield near by: "Third drop—one week," to give us more than the previously arranged four days to get to the next shelf on the ridge.

One look up at the ice slope leading to the site for the drop made us all glad that we had asked for more time. From Camp 9 we would have to drop 400 feet into the Hayden Peak–St. Elias saddle—two miles from camp. Then would begin the job of ascending to the 13,200-foot shelf above the ice slope. From our position here we could see the sunlight glisten on the blue ice of the slope, in its main portion one unbroken sweep of 2,000 feet at an angle varying between 40 and 60 degrees. Studying this for some time, we could understand why no previous parties had ever been higher on this side than our present camp. It was here that we too began to philosophize about the enjoyment to be had on peaks nearer home.

For the following two days, however, we tackled the ice slope, hoping to find some safe way up it. Beginning the first day at midnight, Andy and I were able to work a route through the crevasses directly above the saddle, and up through the ice chutes leading between the rocky ribs at the lower end of the main slope. Using crampons and cutting steps, we succeeded in climbing half way up the slope before the sun began to beat directly against it, loosening the two-inch crust enough to start small slides. We planted an orange streamer to mark the highest point reached and retreated to the saddle with the aid of fixed ropes on the steeper chutes.

We returned to camp with the good news that the slope would go. Early next morning all five of us—Betty, Andy, Ferris, K, and I—again left for the slope, this time planning to carry loads to the top of the shelf.

After K and Ferris had finished the job of cutting steps up the rest of the slope, we assembled on the 13,200-foot knob which marked the site for Camp 10. The view from this snow-covered shelf was superb. The wide expanse of the Malaspina, the world's largest piedmont glacier, curved off to the east and south. A blue haze beyond marked the Pacific. The Tyndall Glacier, far below, wended its way, serpent-like, toward Icy Bay, just visible over the summit of Hayden Peak. Looking toward St. Elias, we had a foreshortened but impressive view of what still lay ahead, 5,000 feet higher.

Far down along the ridge of the cirque we could make out three indistinct dots moving up and over the corniced edge of the rim. The trio were again coming up to join forces with us at Camp 9. We awoke from our reveries and got about the task of descending the ice. With the aid of 300 feet of quarter-inch rope fixed to an ice piton in the upper end of the slope, we backed down through the first steep gullies and onto the main slope, then stomped our crampons in with great care and descended without mishap. The sun was now quite warm and the steps had to be rechopped lower down where they had loosened so much they scuffed off quite easily. Our entry into Camp 9 was greeted with enthusiasm by the trio. They had been able to see the orange streamer waving high enough above them to give abundant encouragement to the prospects of success.

With our route up the slope scouted out and with fixed ropes on the bad places, we felt the need for only one more trip up, so we had five days for rest at Camp 9. Thus we were able to make a first ascent of Hayden Peak, a two-hour snow climb. Its summit was marked by a huge cornice which beautifully overhung the fluted face of snow and ice that dropped an abrupt 4,000 feet to the cirque. The extreme delicacy of the last two feet of the cornice could probably account for our not quite reaching the absolute top.

From camp we had spectacular views of the south face of the St. Elias massif. On the warmer days mighty avalanches rumbled down from its ice cliffs, the sound of a break-off taking some twelve seconds to reach us. During likely periods of activity, we had our movie camera set up, and when a particularly big avalanche broke loose the person nearest the camera would start shooting. The biggest one any of us had ever seen originated on the other side of the saddle, three miles away. At first we could see only what appeared to be a cloud, which hung in one of the larger ravines on that face of the mountain. Soon, however, we noticed that the lower end of this cloud was moving down the mountainside. Tiny specks of ice turned slowly over and over in the air—huge ice blocks being discharged down the slope well ahead of the cloud of powder snow kicked

up by the initial collapse of ice. It was easy to understand why St. Elias was at one time believed to have been a volcano; avalanches such as this sent clouds of snow into the air, which, when seen from the sea, were mistaken for steam arising from a fumerole on the peak.

Two days of threatened storm followed. During the frequent spells of heavy winds and driving snow, we spent the greater part of the time in our sleeping bags. By reading and rereading the mail and magazines dropped to us we were able to maintain our mental equilibrium. Little life stirred about camp, save for an occasional spurt of cooking by Ben Ferris, who had early in the expedition volunteered (without opposition) to do all the galley chores. While the wind whipped by, he would sit in the igloo, stirring up whatever concoction he felt would please the camp. If it didn't please us and we didn't finish it at one sitting, we would get it in the "soup" at the next meal. Ben had also been very conscientiously giving us step tests at each camp. To complete a day's climb, we had to ascend and descend a 20-inch box every two seconds for five minutes, and then count pulse after a minute's rest. We found that as we got higher on the mountain, we also got into better physical condition, which offset the higher pulse rate expected at higher levels.

The day before the drop was to be made at the shelf, the plane came over and read our message in the snow, "O.K. for drop tomorrow." We learned later that they had bets among themselves that we would not be there for the drops, inasmuch as they had counted all eight of us still down at Camp 9. They didn't realize that we had already scouted the route up the slope, and that we did all our climbing in the wee hours.

By nine the next morning, July 13, all but Ferris and Putnam were on the shelf; they were below at Camp 9 to make a final effort to gain radio contact with the plane through the two walkie-talkie radios dropped a week before. They had no luck.

Camp 10 was established on an area apparently free of crevasses. A deep layer of powder snow covered the ice, and there was no indication that distant crevasses continued this far. But one day when Miller was stepping back to take a picture of camp, he suddenly broke through the surface. He thrust his elbows out in time to catch himself on the edge. We hurriedly pulled him to safety and peered into the hole. It seemed bottomless. Thereafter we roped together in traveling about camp. A rope tied to a stake in the center of camp provided a "hitching post" for those who had to travel alone.

The plane came in at 1 P.M. and started its drops. The fog had risen and the drops were made with difficulty. Two large crates of civilian

rations, four days' food for all, hit the edge of the shelf and bounded down the ice slope to the Libby Glacier, 10,000 feet below. This loss was a hard blow, as this food was our reserve for any prolonged storm. This left us with the small amount of food which we had been able to pack up from Camp 9 and two successfully dropped boxes—of K-ration. The next and last circle of the plane brought us a square box which we didn't recognize. Upon opening it, we were greeted with sawdust, then a small package neatly wrapped in paper. Inside this we found four big, round, slightly compressed apple pies. An attached note read: "Pies like your mother used to make, from the old baker at Yakutat. . . . Sawdust with compliments of the Yakutat Carpentry Shop."

The summit was still 5,000 feet above us; another camp was needed, and we were not hopeful of success should a sudden storm come up. Clouds already covered the lower levels below 8,000 feet and were rising fast; threatening cirrus clouds were coming in high from the southwest. We had only five days' food with us, the remainder being at Camp 9. So we decided to try to climb the mountain within the next two days, praying that the expected storm could wait that long.

While Ferris and Putnam stayed in camp for the day's rest they had lost because of the radio, the rest of us roped up, and, packing about forty pounds, left for the steep snow-ridge climb to the prospective site of Camp 11, under the final summit pyramid at 15,300 feet. We broke trail through two feet of powder snow lying on hard ice, changing leads every 100 yards, arriving at the site well after the sun had set. The digging of tent platforms was tedious; with genuine relief we finally crawled into our sleeping bags, after spending an hour melting enough snow for a small cup of tea per man.

A heavy fog enveloped camp the next morning and it would have been foolish to attempt to go higher on the narrow ridge. We briefly explored it but retreated when Andy broke through the snow and a 30-foot section of crevasse roof fell in. We spent the rest of the day melting snow for tea and coffee, passing the single stove back and forth between the two tents. These were end to end, so that we could pass things from door to door without leaving our bags. In the evening, Ferris and Putnam joined us and pitched their tent so as to make it a T-shaped camp. With the wind howling outside and snow flurrying about, it was a pretty dismal-looking picnic spot.

Our prayers for a break in weather were answered. Next morning a wind was blowing snow off the ridge and summit, but otherwise it was clear. Clouds covered everything below 9,000 feet, and the distant higher peaks were frozen islands in a vast white sea. It was two degrees above

zero. At 8 A.M. we left camp in three ropes: Miller, K, and I on the lead rope; Andy, Betty, and Latady on the second; Ben Ferris and Putnam following soon after. We climbed slowly and steadily to the 16,000-foot level. Pausing here to look back, we noticed a small figure heading back into camp—Putnam. He had evidently reached his ceiling and decided to head down instead of delaying someone higher up. He had been wounded in Italy while fighting with the 10th Mountain Division, and was still carrying a shell fragment in one lung. It was a blow to see him heading down now, after he had done so well.

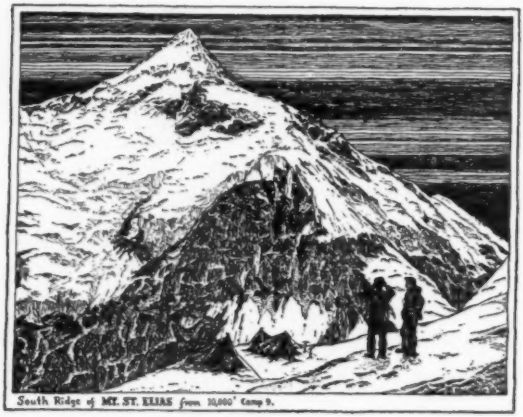
Ben Ferris joined the second rope, and for the next thousand feet of altitude we climbed along the crest of the steep rocky ridge, at times working up ice-covered rock gullies in several of which we had to place fixed ropes. To add to this, we began running into 100-foot cornices which blocked progress up the center of the ridge and leaned far over the icy east slope; west of the ridge deep powder snow made climbing tedious. The final 700 feet of the summit pyramid consisted entirely of broken hummocky cornices plastered with ice feathers. The shadow of St. Elias was creeping out across the clouds and told us to move rapidly. A snow mound lay ahead, and we climbed almost vertically through a narrow funnel of ice. Another 100 feet of climbing followed and we poked our heads over a crest—to see nothing higher. We paused for breath and scrambled up to a small platform of snow—the summit of St. Elias. It was 5 P.M.

Our first reaction upon reaching the summit was of relief at arriving before dark and in good weather. That we were the first Americans to stand there and the first to climb the south side impressed us little. It had taken exactly a month to reach the summit from the day we hit the beach, and it was now July 16, the 205th anniversary of the mountain's discovery in 1741.

Ben asked us to check our pulses, so we went statistical. They averaged about 120; the temperature was exactly zero; the wind velocity was 20 m.p.h.; the altimeter read 18,560 feet, slightly off. (And yet, as we left the top, K set the gauge on the correct height of 18,008 feet and we later observed, when on the beach, that we were under water.)

After two hours of photographic ceremonies and full absorption of view, we noticed that the shadow of the mountain was well out on the cloud sea, a pyramid some 40 miles long. We started down, leaving the top at 7 P.M., following our tracks, rappelling the steeper ice chutes. The sun was setting and casting long purple shadows across the pink snow as we plodded into Camp 11. Another clear dawn started us toward Camp 10, where we arrived in time to stamp a message in the snow for our air liaison: "Made top 7/16; boat 8/4."

On August 2, two days after we returned to the beach and a month and a half after we had first hit it, Tony Novatney came back with his boat. His first words were, "Welcome back to America!" For two days more we lay at anchor in a small cove, waiting for a storm at sea to end. Then we left Icy Bay, and on that day it cleared beautifully. A northwest wind blew the clouds from the entire range and again revealed to us, in parting friendship perhaps, the brilliant white mass of our mountain, still there, still as impressively noble and high as ever.



South Ridge of MT. ST. ELIAS from 10,000' Camp 9.

Sierra Synthesis

By PERRY A. THOMPSON

Regional Forester, California Region, U. S. Forest Service

EXACTLY forty years ago the Congress of the United States substituted the designation "national forests" for "reserves" as applied to the public lands administered by the Forest Service, U. S. Department of Agriculture.[1] By so doing, the Congress formally recognized the policy of "wise use" as opposed to "reservation" for the management of this considerable area which at that time aggregated 150 million acres, or about half again the size of California.

The late Gifford Pinchot, upon whom the Sierra Club conferred an honorary membership in 1912, was largely responsible for this fundamental change in the basic policy for the management of the national forests. As the first Chief Forester, he contributed many primary philosophies which have guided the administrators of the national forests to this day. Probably none was more far-reaching than this concept of developing the resources of the national forests for current use rather than preserving the "reserves" to be tapped at some indefinite date in the distant future.

Upon the organization of the Forest Service in 1905, the Secretary of Agriculture stated, "All the resources of the forest reserves are for use, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources." The Secretary then added a statement which has become the cornerstone of Forest Service policy: "Where conflicting interests must be reconciled, the question will always be decided from the standpoint of the greatest good of the greatest number in the long run."[2] The Forest Service was thus authorized by Act of Congress and administrative order to carry into effect the new philosophy.

More than four decades have elapsed since this policy was adopted. We should now analyze its results and consider whether the same policy should be continued another forty years. It is time for an accounting.

From the standpoint of the administrators, it would have been far easier if the Congress had decided that these forests should be managed for a single purpose: watershed protection, timber production, forage utilization, recreational development, or wildlife propagation. But the Congress and the Secretary of Agriculture realized that these lands were too extensive and were too directly related to the economy of the West to permit their development for any single purpose.

At about this time a Federal forester coined the expression "multiple use," which is generally understood by his successors but too often confusing to his clients, the public. What he meant was that farsighted planning and forthright administration could make possible the use of many resources of wild land (water, recreation, timber, forage, minerals, and wildlife) without excluding use of any one resource. In a sense, it was wishful thinking so far as any critical acre of land was concerned. But in a larger sense, his philosophy was a challenge to wild-land managers to provide for the needs of as many competing uses as possible on the large areas with a minimum of conflicts.

Every individual looks upon the same acre of land through different glasses. Take the typical Sierra meadow as a classic example. The stockman sees abundant feed for his cattle and sheep. The timberman visualizes a location for his sawmill. The recreationist contemplates a natural camp ground. The water user may dream of a reservoir site. The resort operator contemplates an ideal location for his establishment. The aviator foresees a landing strip. The hunter looks to an unobstructed shot at his deer, and the fisherman hopes to land his fish from the cutbanks of the creek that meanders through the meadow. The Forest Officer must see—and evaluate—all these functions of a mountain meadow. He must decide, when conflicts develop, which use or uses of that mountain meadow are for the greatest good for the greatest number in the long run.

As a land manager, he must determine the "dominant" use to which that mountain meadow should be dedicated and then decide upon how the subordinate uses can be reconciled with each other. It is not an easy task.

In fact, this responsibility of managing the national forests for multiple use is unique in Federal land administration. The national parks were established largely for the inspiration afforded by their superlative scenery. The Indian reservations are operated for the benefit of the Indians rather than the public. The wildlife refuges, waterfowl sanctuaries, national monuments and military reservations are developed for the single purposes implied by their designations.

The informed citizen is best qualified to decide how successful has been this policy of trying to provide many public services on the same national forest. But he, in turn, must consider objectively whether the present type of administration assures the greatest good.

Whatever success may have resulted from this unique form of wild-land management depends upon two vital factors: the unselfish and farsighted attitude of the various groups and interests affected and the intelligent, constructive approach of the Forest Officer. Whenever any one group,

whether they be sportsmen, summer or winter recreationists, water users, stockmen, or timber operators, feels that the national forests should be managed for *its special interests* or to the detriment of other uses, the philosophy behind the management of the national forests is definitely threatened.

Such a circumstance has now developed. The stockmen, through their organizations—National Wool Growers Association[3] and American National Livestock Association[4]—have publicly stated that national forest lands primarily valuable for grazing should be made available for purchase at low prices by the "permittees" who now graze their cattle and sheep upon those ranges. What may happen to the public's stake in these lands is anybody's guess but everybody's concern.

These ranges have always been public lands. The taxpayer from California to Maine made possible their protection and development. Whether the national forests shall be dismembered so that certain groups or individuals, who happen to have permits to graze their stock on designated allotments, may preëmpt these portions of the public lands is now a question for the public to decide.

Many stockmen have agreed to reduce their numbers of livestock using the range so as to prevent damage to the watershed by erosion or injury of the forage plants. They have also agreed to delay grazing portions of national forest ranges until the summer vacation period has passed. Some recreation areas have been fenced to permit current use of the same general area by both recreationists and grazing permittees. And there are many areas which have supported fishermen in spring, stock in summer, hunters in fall, and skiers in winter. Through the years various compromises have been made so that the needs of all major interests could be satisfied.

The public statements of the national livestock associations now seem to indicate that the era of multiple use should be terminated and that a single-use principle should be supreme. Fortunately for the public, which has the greatest stake in such a controversy, many years of practical demonstration illustrate the benefits of managing the national forests of California for all the people.

In fairness to the livestock industry and particularly to some of its California members, it should be added that not all stockmen and livestock organizations support this program. Henry Evans, of Inyo County, California, representative on the National Advisory Committee of the Wool Growers Association, and V. F. Christensen, of Modoc County, California, representative on the Joint Public Lands Committee created by the two national livestock associations to study this question, have stated, "We are

in complete agreement in our opposition to turning the federal land in California over to private ownership."[3]

Surely then, it is time for an accounting. The people of California, like those in every other state throughout the nation, must decide whether their national forests should be managed for the greatest good of the greatest number in the long run or whether they shall be preëmpted by a single class of forest user for a single purpose.

The Forest Service is willing to rest its case upon the record of the past forty years. During that period it has conscientiously attempted to synthesize the various elements interested in the economic and aesthetic values of the Sierra. Whether a single class of forest user should now be permitted to dissolve this synthesis is a question which the American people may have to decide this year.

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[1]Act of March 4, 1907.

[2]Memorandum of February 1, 1905 to Gifford Pinchot, Forester, from James Wilson, Secretary of Agriculture.

[3]Resolution No. 40 adopted at annual meeting of National Wool Growers Association at San Francisco, January 28, 1947.

[4]Resolution No. 4, American National Livestock Association Annual Convention at Phoenix, Arizona, January 19, 1947.

[5]Mr. Christensen's position is based on his personal thoughts and follows the dictates of the State livestock associations as well; both organizations passed resolutions at their last annual meetings opposing transfer of public lands to states for management or mandatory purchase by permittees.

The Story of Mount Whitney: Part IV

By FRANCIS P. FARQUHAR

Recapitulation*

WHEN, on July 2, 1864, William H. Brewer and Charles F. Hoffmann, of the California State Geological Survey, beheld from the summit of Mount Brewer a group of peaks higher than the one on which they stood, the known history of Mount Whitney began. Two days later, two young and vigorous members of the party, Clarence King and Richard Cotter, set out with packs on their backs in an attempt to reach the higher peaks. Their experiences are told by King in his *Mountaineering in the Sierra Nevada*, and are described with more restraint in the official report of the Survey. King and Cotter were unable to reach the highest peak, but they had a close view of it from the summit of Mount Tyndall. This peak was named Mount Whitney, in honor of the chief of the Survey, Josiah Dwight Whitney. King returned two weeks later for another attempt, crossing the Kern by the Hockett Trail, from Visalia, and approaching the mountain from the southeast. He made a precipitous climb to within a few hundred feet of the summit, but was forced to abandon the attempt. His route remains an unsolved puzzle.

After seven years, in 1871 King again approached the mountain. A whole chapter of his book is devoted to the thrilling adventures that followed; but the chapter required a postscript, which was duly furnished three years later when it developed that he had not climbed Mount Whitney at all, but had been on the mountain we now call Mount Langley. Meanwhile, in 1873, some men from the Inyo County mines had ridden their mules to the summit of King's supposed Mount Whitney and had observed the higher peak a few miles to the north. Others had done the same thing, and King had to wiggle out of his predicament. He hastened to California and made his way at once to the true Mount Whitney. By this time, however, the route to its summit had been discovered and others had preceded him. Yet, although there were records on the highest point, it was by no means clear to whom belonged the credit for the first ascent.

A lively controversy ensued in the weekly newspaper of Owens Valley, a controversy that can never be quite settled. The generally accepted decision,

*"The Story of Mount Whitney," parts I-III, is summarized here for the benefit of those who do not readily have access to the *Sierra Club Bulletin* magazine numbers for 1920, 1935, and 1936. Sources of the statements in this recapitulation are given in the notes to the original articles.

however, is that John Lucas, Charles D. Begole, and Albert H. Johnson, the "fishermen," were first on the summit, and that the date was August 18, 1873. Others from Owens Valley followed closely—William Crapo, Abe Leyda, William L. Hunter, Carl Rabe, and Tom McDonough. At last, on September 19, Clarence King and his companion Frank Knowles stood on the true summit. But, as with many a discussion about "firsts," there is always a suspicion that an earlier record may turn up. There are indications that this is true of Mount Whitney, but as yet nothing specific has been brought forth in proof.

There was also a controversy about the name of the mountain. The people of Inyo were not admirers of J. D. Whitney, "The Professor," and would have been pleased to see his name deleted from the scene, or at least attached to the lesser peak. The name "Fishermen's Peak," in honor of the pioneers, was vigorously asserted by one faction, but was opposed by others. A compromise—"The Dome of Inyo"—was suggested but it didn't take. The effort to displace "Whitney" was seconded a few years later by the Wheeler Survey, and was revived in 1878 in the California legislature. Brewer and King and others of Whitney's friends, as well as those who recognized the importance of stabilizing names once given, prevailed, and "Mount Whitney" it stands today.

The year 1873 saw still another episode in the story of Mount Whitney. John Muir, after an attempt that nearly resulted in his freezing to death near the summit, tried again by a new route, probably that now known as "the mountaineer's route," and stood on the summit on October 21. Muir visited the mountain again in July, 1875, with two companions, by way of the North Fork of Lone Pine Creek, "around the north base of the mountain . . . mounting in a spiral around the northwest shoulder." James M. Hutchings, of Yosemite, also led a party that year, which produced the first photographs taken on the summit—W. E. James, of New York, photographer. In 1875, also, two parties of the Wheeler Survey occupied the summit in the course of the topographical and geographical survey conducted by the army.

In 1878 came the first ascent by women, described long afterward by one of their number, Mrs. Anna Mills Johnson, in *Mount Whitney Club Journal*, 1903 (*S.C.B.*, 1935, 20:1, pp. 88-89).

The use of Mount Whitney as a site for scientific observations began in 1881 with an expedition conducted by Professor Samuel Pierpont Langley, Director of the Allegheny Observatory. His report was published by the Army Signal Service. One result of this expedition was a proclamation by the U. S. Army of an area including the summit of Mount Whitney as a

military reservation. In 1901 it was found that this reservation had been established "ostensibly for military, in reality for scientific purposes," and thereupon it was relinquished and added to the Sierra Forest Reserve. In 1903 Professor Alexander G. McAdie visited the summit with the Sierra Club outing party and reported on its advantages for a meteorological observatory. First, it was necessary to build a practical trail, for, although Langley's party had succeeded in taking animals to the summit, the route was too hazardous for regular use. The task was undertaken by the people of Lone Pine and was completed in 1904 by G. F. Marsh of that place. It was used that summer by a notable party under the leadership of Dr. Barton Warren Evermann, who was in the Kern River region investigating the golden trout. His side trip to Mount Whitney nearly proved fatal to the whole party inasmuch as they were caught on the summit in a severe thunderstorm that brought death to one of their number and knocked down two others.

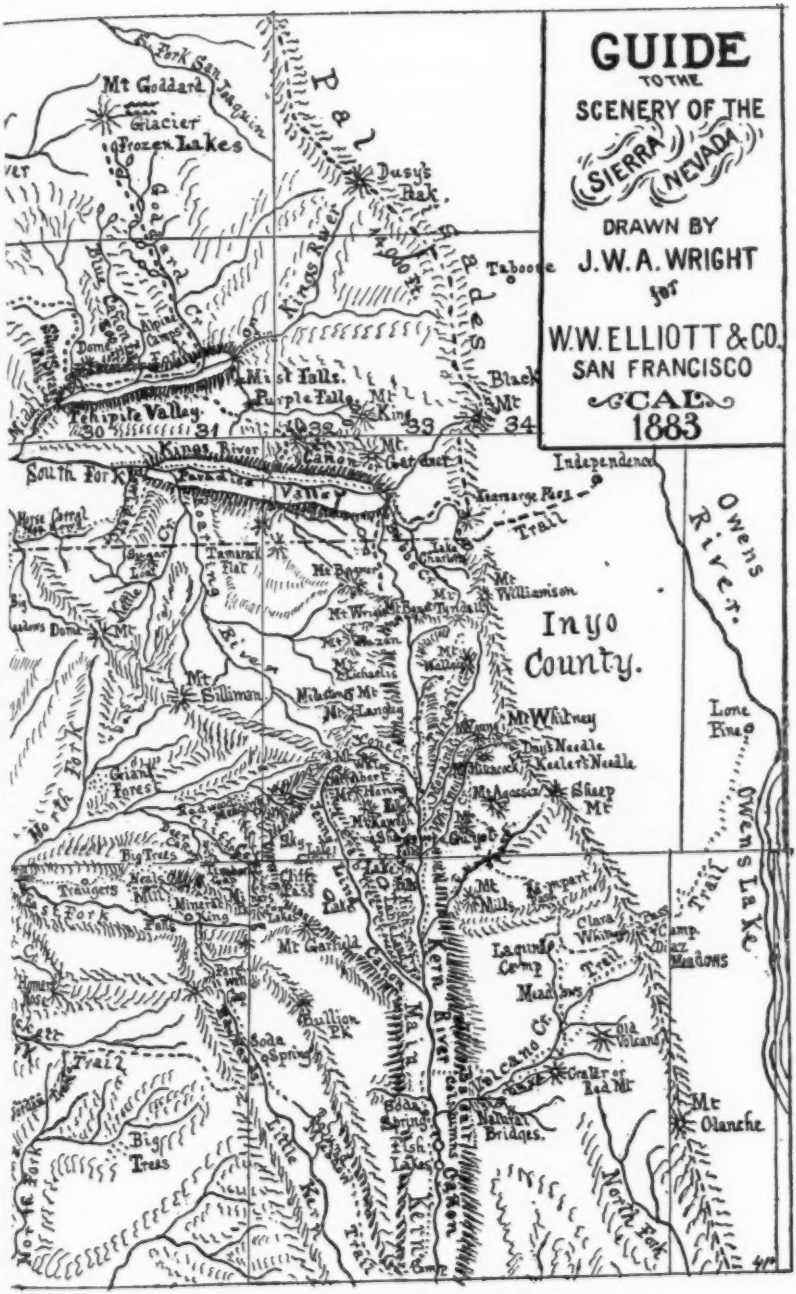
The plan for erecting a shelter for scientific observers originated with Dr. W. W. Campbell, Director of the Lick Observatory. With Dr. C. G. Abbot, of the Smithsonian Institution, he remained on the summit through the night of August 24, 1908, a night "not spent in comfort." The following year Marsh rebuilt the trail and constructed the building that still stands, in spite of misuse and neglect. Campbell and Abbot and their associates conducted experiments for about two weeks until driven off by unfavorable weather. Dr. Abbot returned in 1910, and in 1913 a Smithsonian expedition occupied the summit for two weeks. Although no further use has been made of the shelter by organized scientific parties, Mount Whitney's slopes, lower down, were the scene of observations in the study of cosmic rays, under the direction of Dr. Robert A. Millikan, in 1922, 1924, and 1925.

Since the time of its discovery, in 1864, there has been little doubt that Mount Whitney is the highest point in the United States, exclusive, of course, of Alaska. The altitude above sea level of an interior mountain is not easily ascertained and only a long series of preliminary observations has made it possible to state the altitude of Mount Whitney with anything approaching precision. The height above a base at Lone Pine was measured by the U. S. Coast and Geodetic Survey, in 1928, with unusual care, through a line of levels, so that if a variable factor remains, it is in the altitude of the base. Computations have been made, varying from 14,898, in 1873; 14,522, in 1881; 14,515, in 1903; 14,502 and 14,499, in 1905; 14,501, in 1907; 14,496, in 1928; and, more recently, 14,495 feet, or approximately 4418 meters.

CONTINUATION
1881

Coinciding with Professor Langley's visit to Mount Whitney for the purpose of observing the quality of solar heat was that of "The Three Ws"—Wallace, Wales, and Wright. William B. Wallace, of Visalia, who was later to be a distinguished judge of the Superior Court of Tulare County, was then about 32 years of age; the Reverend Frederick H. Wales was a Congregational minister then living in Tulare City, about 36; Captain James W. A. Wright, of Hanford, somewhat older and "the fleshy member of our party," according to Wallace, was a graduate of Princeton, class of 1857, who had served in the Confederate army. Each has left an account of the trip: Wallace, in the *Mount Whitney Club Journal*, May, 1902, the first of three annual numbers published in Visalia; Wales, in the "Guide to the Grand and Sublime Scenery of the Sierra Nevada in the Region about Mount Whitney," a booklet published in San Francisco by W. W. Elliott & Co., in 1883, now to be found in only a few libraries (notably the Bancroft, in Berkeley, and the Library of the University of California, Los Angeles) and in the almost equally scarce *History of Fresno County*, published in 1882 by the same company; Wright, in letters printed in the *Daily Evening Post*, San Francisco, September 3 and 17, and November 3, 1881. There is a sketch map of the region by Wright in each of the Elliott publications, almost the same in each, and there has been found a manuscript map by Wright of a smaller section but on a larger scale. From these accounts and maps a good deal may be learned about the Mount Whitney region and the routes approaching it as they existed in 1881.

Wallace and Wright started their mountain trip at Mineral King. Wallace, already experienced in the Sierra, acted as guide. They crossed Farewell Gap to the Little Kern, where, at Edwards' cabin, they joined Wales, whom Wright speaks of as "a Dartmouth man, and an expert in mountain climbing." The three then crossed the Kern by the old Hockett Trail, ascended the creek then known as Whitney Creek, which they wished to name Volcano Creek, and crossed the main crest to Diaz Meadows. Wright calls the pass "Diaz or Lone Pine pass"—it apparently was just south of Trail Peak. They recrossed the crest by what Wright called "Cora Whitney Pass," but which is "Clara Whitney Pass" on the map, and appears to be what is now known as "Cottonwood Pass." Thence they crossed "Rampart Pass" (Wallace, Wales, and map), which led to "Loomis Creek," in the position of the present Rock Creek. They named Mount Mills, south of the canyon, for Anna Mills, heroine of the 1878 climb (*S.C.B.*, 1935, 20:1, p.



PORTION OF MAP FROM ELLIOTT'S *HISTORY OF FRESNO COUNTY*

88), and Mount Guyot, on the north, for Arnold Guyot, Swiss geologist and professor at Princeton (Elliott's *Guide*, p. 49). Wallace climbed the latter mountain and built a monument on top.

At the head of Whitney Creek they found the Langley party encamped at the lake, appropriately called, from its shape, "Guitar Lake," close under the walls of Mount Whitney. The visitors, Captain Wright reports, were cordially welcomed by the scientific party. "Captain Michaelis had the stars and stripes raised on the camp flagstaff in honor of our visit! It was duly appreciated. Don't you know, as the memories of the past come in a flood tide at this unexpected incident, it made me feel odd and good all over? The stars and stripes, the flag of our now united country raised in honor of our visit, and I, an old battle-scarred and weather-worn Reb. It sent a thrill to my heart I shall not soon forget." (San Francisco *Post*, Sept. 17, 1881). Wallace and Wright accepted an invitation to spend the night on the summit of Whitney. "Dining after dark," says Wallace, "we sat around a camp-fire built of wood worth $140 a cord in that market; for it cost the troop $35 to get one-quarter of a cord to the summit." "Mr. Crapo," says Wright, "sat up all night making regular observations with mercurial barometer and thermometer.... These fullest and most accurate observations to obtain the true altitude of Too-man-i-goo-yah (the very old man or guardian spirit of the Indians) or Mount Whitney, have not yet been fully reduced, but the indications are that it will not be far from 15,000 feet, possibly a little less." Langley's final computation was 14,522 feet.

On the summit they met A. H. Johnson, the companion of Begole and Lucas on the ascent of August 18, 1873—eight years before. Wright says they were "among the first, and most probably the very first, who ascended the true Mount Whitney." Wright had an excellent opportunity to enquire about the early ascents and apparently availed himself of it, for he gives a good deal of space to them in his letter dated October 21, published in the San Francisco *Post* of November 3, 1881. He copied records found on the summit, including Clarence King's and gave praise to Anna Mills who, in 1878, was among the first women climbers.

Wales apparently did not spend the night on the summit, but put in his time making ascents of neighboring peaks. In Elliott's *Guide* it is stated that he climbed Mount Young, and in my copy of that booklet there is a note in Wales's handwriting that he climbed Mount Hitchcock, too. He gave the names now borne by both these peaks. J. H. Czoch, of the Sierra Club, found Wales's notice on Mount Young in 1934 (*S.C.B.*, 1935, 20:1, pp. 108-109). "The Three Ws" gave names to a number of other peaks in the region, as shown on Wright's maps, but only a few have survived.

On their return the party descended the upper Kern, crossed Chagoopa Plateau, made the first ascent of Mount Kaweah, went to the head of the Big Arroyo, and ended their trip by crossing "Cliff Pass" (Black Rock Pass). "The greater part of the 200 miles we had traveled," writes Wallace, "was in the wake of the sheep-herder, and it was with a new feeling of delight that we rode towards Mineral King through ungrazed groves and meadows . . ." No wonder that they were eager to propose a national park! "Too-man-i-goo-yah Park," they would have called it—a plan that was consummated over forty years later under a simpler name. Nor is it surprising that as a result of this memorable trip, the Reverend F. H. Wales became enthusiastic about organizing another. An undated circular bearing his name proposes a trip that if it had taken place as planned would have antedated the Sierra Club outings by perhaps fifteen years. Alas, there is no record that such a trip took place; but what a lulu it would have been, with its "Tent accommodations, competent cooks who will furnish good, wholesome meals, reliable guides for parties wishing to branch out in rambles for study or pleasure, and packers who will transport materials from place to place"—and fifty pounds of luggage allowed to each person —all for $100 each person, "including six weeks' board, horse and saddle, transportation, tuition for lectures, mail service, guide fees, etc."

1883

On August 17, 1934, Jules Eichorn, who with Marjory Bridge was completing an ascent of the East Face of Whitney, found a rusty can a few feet below the summit. In it were the records of several parties who had been upon the summit in 1883 and 1885. The records included two U. S. postal cards. On the back of one of them was written, "Thomas Davidson, Willie S. Bliss (age 17), George D. Oliver (age 16), made the ascent of Mt. Whitney, July 30th, 1883." On the back of the other card were the names, "Chas. Forman, F. R. Bliss, D. L. Bliss," and the date July 30, 1883. The date had originally been written "29" on both and had been crossed out and "30" written above. The significance of this will presently be seen. On the front of the second card was written, "Left Lone Pine July 28th 1883 at 7-10 A.M. Arrived on top of Mt. Whitney July 30, 1883 at 11-40 A.M." Also, on the back of the two cards was written, respectively, "made ascent C. T. Bliss August 8th 1885;" and "C. T. Bliss Aug. 8th '85."

Soon after these records were found I called on Mr. W. S. Bliss, in San Francisco, who told me that he recalled the occasion very well. He and George Oliver made the climb with George's uncle, Thomas Davidson, of Carson City, Nevada. The cards were prepared in advance, but as they took

longer than expected the date originally written had to be changed. Duane L. Bliss, Willie's father, then living in Carson City, Frank R. Bliss, of New Haven, Connecticut, and Charles Forman, of Virginia City, did not make the climb; their names were taken up by the boys. From Mr. C. T. Bliss I learned that he made the ascent in 1885 with Thomas Magee, of San Francisco, R. J. Laws, Superintendent of the Carson and Colorado Railroad, and D. A. Bender, also connected with the railroad.

The remaining records related to a party of young people, perhaps the first of dozens of similar groups. On a piece of rust-stained ruled paper was inscribed: "The following party left Bakersfield July 12/83 and reached the summit of Mt. Whitney Aug 1/83—Jennie [Virginia] Jameson, Ella B. Roper, Samuel Allen, Jack Jameson, Henry J. (Jeff) Carver, Chas. A. Roper," and on the back, "When Angels guide us to a higher land. May this be a momentum of our happy band." The names were also written on one of the Bliss postal cards, but with the date Aug. 7th.

Enquiry soon brought out the fact that all but Jack (John M.) Jameson were still living in 1934. It was learned that Sam Allen was 23 years old at the time of the trip—the oldest of the party. From Mrs. George B. Landers (Ella Roper) was obtained a letter written by her from Bakersfield, August 17, 1883, in which she described the trip. Condensed, and slightly edited for the sake of clarity, the letter reads as follows:

It was sundown when we arrived at Mr. Carver's (Glennville). We staid there ten days, camping and exploring the whole country round. We were roasted one night by the boys, we had concerts, we gave the boys a big dinner with four courses and buttonhole bouquets. Finally Jeff Carver and Sam Allen came up all ready to start for Whitney. Our party in the meadows had varied from eight to twelve, but now we numbered six as we started over the grades—took three packs.

We were several days going to the lake and camped in beautiful green meadows all the ways. The lake is 100 miles from Glennville and is on the Kern River—it was caused by a great landslide which blocked up the river and left a narrow channel for its egress. There were boats (dugouts) on the lake and we had some fine rides.

We pushed on to Whitney Creek & found Mr Vrooman and Louis Chittenden. They joined me with a friend and we went farther up and stopped to fish. *Golden trout*—lovelier than gold fish, with red splashes on their sides—hundreds of them. We all fished—I caught a dozen—they'd bite at anything.

One day towards evening when we were walking to keep warm and had on the boys' coats, there came a great shout, "The Lake! The picture in *Harper's!*"* Jeff fired off his rifle and there was joy in camp. We camped there and found fine feed for the horses.

*Harper's New Monthly Magazine, June, 1883.

The next morning we climbed a peak supposing it was Whitney. Surveyors had made the same mistake and had named it "Duck Peak." We walked twelve miles that day. Next day Jennie got sick, Jeff and Jack went exploring, while Sam and I brought up the horses and packs to the very edge of the timber line. The boys came home at night tired out—they had been on a high mountain from which they could *see* the monument on Whitney.

Next morning we started at four with our lunch in knapsacks. At ten we could see Whitney—ate some lunch. Walked and walked, over rocks, great boulders, around precipices bordering on little lakes, and finally I gave out. Jeff and Sam were ahead prospecting, while Jack and Charlie, Jennie and I, lay down in the blistering sun and slept for half an hour. Then Jeff yelled to Sam, and Sam yelled to us—from peak to peak: "Mt. Whitney—wood and water—come on!" We saw a figure in the distance waving a flag wildly from a rocky peak. This put new life into us.

Reached the top finally. We read all the papers and made copies. Saw the stand for mounting a telescope. We rested an hour and lunched—found delicious melted snow water and some wood which had been carried up. The view was grand—but we were so tired.

The boys asked if we could go back. Jennie said "Yes"—I said I would try. Down hill it was easy enough, but when it came to climbing again, when the sun went down and we were scaling along the precipices on the lakes, then we had to be *dragged*. Jeff and Charlie had gone on ahead and built a great fire which we could see for miles. Sam and Jack said they would give anything if they only had us safe in camp.

Finally, at ten o'clock, we reached camp. I had been too dizzy to stand alone for miles. We had walked twenty miles that day—think of it! But we had done what everyone had said we couldn't do and we were happy.

1890

In the summer of 1890 J. N. Le Conte, the "Little Joe" of so many subsequent years of camping and exploring in the High Sierra, and now the Honorary President of the Sierra Club, was twenty years old and a student at the University of California. With three fellow-students, Hubert P. Dyer, Cornelius B. Lakenan, and Fred S. Pheby, he set out the end of June for the Kings River region and the Kern, with Mount Whitney as the ultimate goal.

On July 21 the party crossed Kearsarge Pass to Independence and two days later they were ascending the Hockett Trail toward the head of Cottonwood Creek. As they neared the crest of the range they took the wrong branch of the creek and found themselves close under "Sheep Mountain" (Mount Langley). The trail construction that makes Army Pass intermittently passable today had not then been undertaken. They found no way for their jacks, but "Bert," "Lake," and "Joe" climbed "a huge conical peak on the Main Crest" on the northern slope of which was a vast cirque,

and from the summit they obtained their bearings and to their great joy beheld Mount Whitney. "It loomed far above its neighbors and presented its perpendicular face to us in profile."

Le Conte's journal of this trip, from which the words just quoted are taken, has not been printed, but it exists in a few mimeographed copies of which one is in the library of the Sierra Club. It presents a vivid and a delightful picture of a burro trip in the days when detailed maps were non-existent and only a few cowboys and sheepmen knew the intricate ways of the high country above the canyons. Dyer wrote a more condensed account of the trip, but one full of information, which was published in *Appalachia*, and a description of the route, which was published in the first number of the *Sierra Club Bulletin*.*

By July 29 the party was camped where so many Sierra Club members have since awaited the call to begin the early morning ascent of Mount Whitney. From the Le Conte journal: "July 30.—A yell from Lake woke everybody long before daylight. It was frightfully cold! How different it felt yesterday, to plan an early start than it was to put the same into execution this morning! I got up and tried to start a fire. In the darkness it seemed ages before we could find the wood, and never before did the matches go out so easily. Then the wood wouldn't catch, and all the time we were shivering our teeth out. When it did finally blaze up, we all collected around to warm ourselves while cooking a light breakfast of mush and coffee. The stars were still flashing in the sky and the moon was setting on the smoky western horizon as we ate it, but when each had his pack ready to start, dawn was advancing."

They passed the Langley campsite, where they saw "quantities of old iron, lumber, scantlings, and strips of wood twenty-five feet long, besides old stoves and a profusion of empty tin cans scattered about." Scientists were evidently as untidy in the early days as some present-day campers.

Le Conte gives an interesting description of the two "needles," Keeler's and Day's: "Looking at Mount Whitney from Lone Pine the observer sees two immense vertical columns to the south of the summit rising clear out of the canyon below to an almost equal height with the mountain itself. We were now standing in the gap between these, each towering high above us. The space between them was what I may call a canyon stood on end, so little did it depart from the perpendicular."

At the summit Le Conte set up the transit. There was no doubt that they

*"Camping in the Highest Sierras," by Hubert Dyer, in *Appalachia*, January 1892, Vol. 6, No. 4, pp. 273-289; "The Mt. Whitney Trail," by Hubert Dyer, *S.C.B.*, January, 1893, Vol. 1, No. 1, pp. 1-8, map and two illustrations.

were on the highest point of the range: "The intersection of the cross-wires of the telescope swept the empty sky in every direction," Le Conte writes, "the nearest approach being Mount Williamson on the north and Sheep Mountain on the south."

"We searched the cairn for records," relates Dyer, "but found very few,—so few that we concluded that many had been either destroyed or carried away; a conclusion confirmed later when we were told of parties which not only carried away records as mementos, but maliciously threw some over the cliff. Clarence King's name was not found, though we hunted long and eagerly for it. The names of Captain Michaelis and George Davidson* of Langley's party were there, and also those of some gentlemen who passed one night on the summit with the former. Before leaving we carefully gathered every scrap of paper visible, and placed them securely in the cairn. Our names and a short account of our trip we placed in a can brought for that purpose from below."

"During the afternoon," says Le Conte, "we did little else than lie on the summit and enjoy the view. The weather was perfect, not a cloud in the sky. We could distinctly see the huge wall on the western side of the Grand Canyon of the Kern River, and the upper portion of a magnificent waterfall pouring over it. About 3:30 Lake started along the cliff to the south, and climbed without difficulty to the summit of one of the great columns on the cliff front. We wouldn't have believed the distance so great. He looked like a little black speck on the top." Dyer and Le Conte remained on top until five o'clock, nine hours in all.

1902

The Sierra Club outing in Kings Canyon in 1902 was a notable one in many respects. Not only was it an even more ambitious undertaking than the first outing the year before in the Yosemite-Tuolumne region, but the difficulties of high water set standards of comparison for years to come. But most notable of all was the personnel, which included a galaxy of stars from the arts and sciences and, if tradition and the rather inferior snapshots of the time may be credited, a veritable bevy of bloomer-clad beauties. When, at the end of July, the party emerged at Giant Forest, a few representatives of the aforementioned classes—arts and sciences and bevy of beauties—were by no means satiated. Accordingly, a party was organized to return to the mountains for the express purpose of climbing Mount Whitney. It is a pity that so little remains of a documentary character to perpetuate the memory of that trip. In the only printed account

*Son of Professor George Davidson of the U. S. Coast and Geodetic Survey.

that I know of only the bare outlines are given, and that account is by the eldest of the group, Theodore H. Hittell.* John Muir was of the party, as were Henry Gannett, of the U. S. Geological Survey, Dr. C. Hart Merriam, head of the Biological Survey, and William Kieth, the painter. Hittell slights the others with a mere "four ladies and three boys," but we know their names and we wish we knew more of what they thought and said about what went on. Dr. Marian O. Hooker, of Santa Barbara, was one, and Miss Alicia Mosgrove, of San Francisco, another. Miss Helen Green (the late Mrs. Austin Sperry), Mrs. Dickie and her son Donald, and two Kinnie boys completed the party, except for the packer, Wallace Baxter, known as "Patsey," who helped out with the singing.

From Giant Forest, Muir, Hittell, and their companions took the trail to Alta Meadows, thence down Seven Mile Hill and over Timber Gap to Mineral King. Over Farewell Gap and Coyote Pass the trail brought them to Kern Canyon, where they made camp at the Soda Springs. Around the campfires they had talks and stories, music and merriment. "The ladies," says the chronicler, "had taken along a guitar, upon which several of them were experts; all were good singers." For two or three weeks they camped in the Kern and made side trips up the Kern-Kaweah and to Mount Whitney.

"We started on this trip [to Mount Whitney] from our temporary camp at Junction meadows," says Hittell, "where the Kern-Kaweah and Crabtree creeks come into the main river. It took us several days to climb up on horseback the rocky and precipitous eastern side of the canyon and get around over the rough and indistinct trails, to the neighborhood of Whitney, though the distance in a direct line was only six or eight miles."

On the morning of the climb, August 11, they were roused at three o'clock by a call from John Muir, "the leader and mainspring of the entire trip." By five they were on their horses, ten in all—Muir, Hittell, Gannett, and the four ladies and three boys. In a rocky amphitheater they left their horses and began the climb at seven o'clock. "The boys hurried on first," writes Hittell, "then Dr. Gannett. Two of the ladies followed, and I tried to keep up with one of them, but about halfway up I found her pace too fast and told her to go on and leave me to have a good rest. Mr. Muir and the other two ladies were some distance behind, taking it more slowly. By the time they came up I was ready to go ahead again and, taking a new start, I kept up with them, and at ten o'clock reached the summit, where the boys had been for half an hour or more. No one of the party, however, touched the highest point until after Miss Marian Hooker had done so. This honor was

*"On the Tip-Top of the United States," *Sunset Magazine*, February, 1903, pp. 294-303.

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(Left to right
Gannett, Thec

ON THE SUMMIT OF MOUNT WHITNEY—1902

(Left to right, except for those on either end) Mrs. Dickie, Marian Hooker, Alicia Mosgrove, John Muir, Henry Gannett, Theodore H. Hittell, Helen Green.

PROPOSED TRIP

TO

MOUNT WHITNEY.

IT is proposed to organize a party to spend the summer vacation in visiting Mt. Whitney and making a scientific study of it and the adjacent country, under the guidance of competent instructors.

TIME.

It is thought that from the middle of July to the last of August will be the most suitable time, but it will be so arranged that those who cannot start with the party may join it at any time.

PLAN OF STUDY.

It is proposed to study the Geology, Botany, Mineralogy, Ornithology, etc., of the sections visited and to make collections. Competent instructors will be engaged to go with the party and to lecture upon the various subjects. It is expected that Prof. Chas. Hitchcock of Darmouth College, one of the most eminent geologists of the country; also Prof. Joseph Le Conte of the State University, probably the best Naturalist on the Pacific Coast, will be with the party, and others are being arranged with for other departments.

ROUTE.

The party will be transported as far as "Summer Home" by vehicles. Here they will have an opportunity to examine one of the groves of "big trees" (Sequoia Gigantia) many of which are from 75 to 90 feet in circumference and 300 feet high; thence by horse-back, down the Little Kern and up the Kern via Runkle's, the Natural Bridges, Red Mountain [an extinct crater], Whitney Creek, Rampart Canyon, etc., to Mt. Whitney; thence down the Canyon of the Kern [scene of the celebrated painting by Bierstadt], and up Jenny Lind Canyon to the Kaweah Mountains; thence via Clipper Gap and Timber Gap to Mineral King.

ACCOMMODATIONS.

Everything necessary for the convenience and comfort of the party will be provided. Tent accommodations, competent cooks who will furnish good, wholesome meals, reliable guides for parties wishing to branch out in rambles for study or pleasure, and packers who will transport materials from place to place.

Each person will be expected to furnish his own blankets and will be allowed fifty pounds of luggage without extra charge. Couriers will bring mail to camp weekly or semi-weekly, according to size of party—possibly oftener—and everything will be done to make it pleasant for the tourist student.

COST.

The expenses of the trip, including six weeks' board, horse and saddle, transportation, packing services, tuition for lectures, mail service, guide fees, etc., will be $100 per individual.

SPECIAL.

For the accommodation of those who cannot join the party at the start, arrangements will be effected so that such can be guided in to join the party at any time, and a rebate of expenses will be allowed to such at the rate of ten dollars per week for time not with the party.

ATTRACTIONS.

The country to be seen [the High Sierras] is among the most attractive in America, being in the heart of the proposed new U. S. Park. Mt. Whitney, the highest peak in the United States, will be ascended, from the top of which a distant view of Death Valley, the lowest point in the United States, may be obtained; also Owens Lake and Valley, sleeping in beauty at the foot. Away to the north the peaks about Yo Semite, South Dome, Cloud's Rest, El Capitan, Glacier Point and Cathedral Dome, are seen in a massive group, but easily distinguished with a glass.

On the west, like a panorama lies the entire length of the great San Joaquin Valley, with its millions of acres of waving grainfields and its myriads of cities, towns and hamlets thickly dotting the landscape, while the Coast Range, seen in magnificent perspective, stretches away in countless miles from Tehachipi; and out of sight in the dim distance and behind it lies the great, calm Pacific Ocean—of which so comprehensive a view can be found in no other point in our country.

Almost at our feet basks Tulare Lake, the largest body of fresh water west of the Rockies, while away to the south lies Mt. ~~Monache~~ Moache, with its striking profile of "the Sleeping Beauty," which far surpasses "the Old Man" of the Franconia Mountains in its realistic proportions.

The Canyon of the Kern is second only to the Yo Semite Valley, and in point of altitude of sides and waterfalls, excells

Olanche.

that magnificent park, Shagoopa Falls being no less than 3500 feet in verticle

EXTRA.

Special facilities for bathing, shaving

Clarence

that magnificent park, Shagoopa Falls being no less than 3500 feet in verticle fall, according to the measurement of Mr. Crapo, who was guide to Clarence King. From the summit of Miners Peak it is said twenty-two lakes can be pointed out.

SPORT.

The whole region is traversed by streams and brooks, most of which abound in the finest trout; here are to be seen the marvelous rainbow or golden-side trout, found in no other locality on the globe; also deer, mountain sheep—now nearly extinct—and other game for the lover of sport.

PASTIMES.

Besides the lectures upon the natural sciences, and the various entertainment around the camp-fires, the collecting of specimens as mementoes of the trip, another unique form of entertainment will be the opportunity afforded of

NAMING MOUNTAINS.

Since the expedition will be in the heart of hundreds of unnamed peaks, varying from 10,000 to 14,000 feet in altitude; and whoever chooses to ascend, build his monument and leave his record, has the privilege of naming. It is probable that in no other place in the United States does such an opportunity offer itself.

PICTURES.

A good Photographer will accompany the party that choice scenes may be preserved as mementoes of the trip.

LADIES.

There will be every provision made for the comfort of ladies, who should be able to ride horseback and, if possible, furnish their own saddles.

EXTRA.

Special facilities for bathing, shaving and laundrying will be provided, the cost being additional.

CASH.

Owing to the nature of the trip and the heavy expenses that will be necessarily incured in preparation, it will be necessary for those who desire to join the expedition to adanvce $25.00 to meet the preliminary outlay; the balance will be collected at the time of starting into the mountains.

RESPONSIBILITY.

The undersigned will assume no responsibility further than that pertaining to the feeding, furnishing the means of transportation, guidance and general comfort of the guests.

Those desiring to join the class should write at an early day to

REV. F. H. WALES,

Principal San Joaquin Valley Polytechnic Institute,

Tulare City, Calif.

After reading this, kindly hand to your neighbor.

PROPOSED TRIP

TO

MOUNT WHITNEY

REVEREND F. H. WALES'S UNDATED CIRCULAR FOR A PROPOSED OUTING

HIGHEST IN THE U.S.A.—1903

Fred Pheby

J. N. Le Conte on the Monument

Hubert Dyer

PUSHING ROCKS OVER THE BRINK OF MOUNT WHITNEY—

PERMISSIBLE IN 1903, WHEN THE SIERRA WAS UNINHABITED

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reserved for her on account of her being a grand-niece of Professor Josiah D. Whitney, for whom the mountain was named.

"As I was seventy-two years of age, and perhaps the oldest person that ever climbed Mount Whitney, there was a hurrah by the party as I reached the highest point and placed my hand upon the piled-up monument of rocks erected there." They sang and danced in celebration.

The return to Kern Canyon was made over the usual trail by way of Rock Creek and Whitney Creek. Hittell comments on the brilliantly colored golden trout and on the red cinder cones. From the Soda Springs camp they retraced their way to Mineral King and arrived at Visalia August 16.

1903

The first of a series of ascents of Mount Whitney by large groups from the Sierra Club outing party occurred in July, 1903. It was the Club's third annual outing, the first in the Kern River region. A base camp was established in Kern Canyon at Coyote Creek and was named "Camp Olney" in honor of Warren Olney, one of the founders of the Club. From this camp a "pioneer" party of about forty (another account says thirty-one), led by J. N. Le Conte, set out on July 5 and reached the summit July 8. This party included Prof. Alexander G. McAdie, whose article on "Mount Whitney as a Site for a Meteorological Observatory," in *Monthly Weather Review*, November 1903 (*S.C.B.*, June 1904, 5:2), led ultimately to the use of the summit by the Smithsonian Institution and Lick Observatory parties.*

Another party of the Club, comprising over a hundred, left Camp Olney on July 9, via Volcano Creek and Rock Creek, and camped at Crabtree Meadows. Two groups, of four and five, respectively, climbed the mountain during the night of July 11-12, but the main party, led by William E. Colby, left camp shortly after four o'clock and arrived at the summit during the morning of July 12—one hundred and three, in all, "the largest party ever assembled at one time on a California mountain-top."†

First Flight Over Mount Whitney—1914

Among the events that punctuate the development of flight in heavier-than-air machines a place must be given to the successful flight of Silas Chris-

*S.C.B., 1936, 21:1, p. 65.

†"The Notable Mountaineering of the Sierra Club in 103," by E. T. Parsons, in *S.C.B.*, January 1904, 5:1, p. 45. Other articles from which this account has been drawn are: "On the Trail with the Sierra Club," by William Frederic Badè, in *S.C.B.*, January 1904, 5:1, pp. 50-65; "Up Mount Whitney with the Sierra Club," by Victor Henderson in *Sunset Magazine*, October 1903, pp. 505-515; "Kern River Canyon, the Sierra Club's Expedition—1903," by Josephine Colby (William E. Colby's sister), in *Overland Monthly*, January 1904, pp. 14-19; "With the Sierra Club to Mt. Whitney," by A. H. Allen, in *Mount Whitney Club Journal*, May 1904, 1:3, pp. 114-120.

HIGHEST IN THE U.S.A.—1903 Fred Pheby
J. N. LeConte on the Monument Hubert Dyer
PUSHING ROCKS OVER THE BRINK OF MOUNT WHITNEY—
PERMISSIBLE IN 1903, WHEN THE SIERRA WAS UNINHABITED

tofferson over Mount Whitney on June 25, 1914. The fledgelings were working hard in those days to gain altitude and to keep aloft long enough to attain a significant goal. Christofferson was one of the most indefatigable in such efforts. At the same time there was in Inyo County a man equally indefatigable in working for better roads, not only in Inyo County, but to it and through it—Wisner Gillette Scott, Secretary of the Inyo Good Road Club. It was under the auspices of that club that Christofferson took off from Lone Pine at nine minutes past five that June morning in a tractor-biplane with a 100-h.p. motor and a wingspread of forty-seven feet, seven inches. Everything complete—pilot, one passenger, thirty gallons of gas, and the plane itself—weighed 1,850 pounds. On his first attempt he reached a height of 13,428 feet, and returned to the ground in six minutes less than an hour. Perhaps he was just warming up and tuning his engine. At all events, nothing daunted, he took off again at 8:21 A.M. and at 9:05 was directly over the summit of Mount Whitney—a new altitude record for America at 15,728 feet. He made a quick descent and landed at Lone Pine at 9:17. Scott's illustrated account of the event will be found in *Pacific Motor*, San Francisco, July, 1914, if you can find a copy of the magazine,* under the title "Motor Touring on the Air in Trans-Sierra California."

*There is a copy in the State Library, at Sacramento.

Tuolumne Winter

By HAROLD C. BRADLEY

[*Twenty-five years ago the* Bulletin *carried an article, "Across the Sierra Nevada on Skis," by Harold Bradley, son of the late Cornelius B. Bradley, one of the twenty-seven men who signed the club's articles of incorporation. Members who recall Dr. Bradley's earlier article could reasonably assume that his present contribution would consist only of early recollections of Sierra skiing. It does not. He has kept up his skiing during the intervening years, no doubt deriving no little encouragement from the new generation of well-known skiing Bradleys.* Ed.]

WHEN winter drapes a shining mantle of snow over Tioga and the Meadows, all their lost youth returns and the wilderness is restored. It looks, and is, exactly as it was a thousand years ago. If you do not scrutinize too minutely you might never suspect a highway or a filling station or a store. There is no sign of human occupancy. There are no improvements. There is no urgent roar of speeding cars; no smell of gasoline in the crystal air; no jarring strains of jazz. The only tracks on the miles of spotless snow are the occasional coyote's trail and your own. Solitude and perfect peace are again supreme.

It was because of this miracle of winter that we long had planned a sojourn in the Tioga country. The return of our soldier boys gave the vague dream a measure of possibility. We could approach Tioga best by way of Leevining Canyon. Camp Tioga would have to be our first objective. Soda Springs would be the ideal base from which side trips could be worked out later. Lake Tenaya offered a possible outpost to the west. We could return to Leevining, our car and civilization, when the trip was over.

Mrs. Berglund, who owns and in summer operates Tioga Camp, a mile or two below and north of Tioga Pass, was most coöperative. She was willing to rent us one of her cabins for the winter and agreed to meet all the necessary details which would be required for us to get into it in February. The Lodge Committee of the Sierra Club was equally agreeable to the idea and gave us the right to use the McCauley cabin on the club property in Tuolumne Meadows. Basic law which governs the use of park facilities made it impossible for us to rent ranger cabins, but Superintendent Frank Kittredge and his rangers were interested in the expedition and gave us valuable information and many helpful suggestions. In a matter of days we found ourselves provided with the permissions which would make this

dream come true. We proceeded at once to assemble the equipment and the food, the medicine kit, the tools, the repair outfit for skis. Most of it was cached at Soda Springs. Smaller caches were placed at Camp Tioga and at Tenaya Lake. We returned to the Meadows to cut and split an ample wood supply for the six weeks' visit.

There was no possible way to predict the depth of the snow cover of course, but shovels tied in trees fifteen feet above ground would be our guarantee that we could enter the cabins no matter what the depth should prove to be.

Snow in the Sierra this winter was much below the normal pack. This was in our favor, since it minimized the work of digging out our cabins. For skiing, the difference between five and ten feet of snow is not significant. It did make the climb up Leevining Canyon more than usually difficult and hazardous because of the projecting rocks and the fragile snow roofs over dangerous caverns. But it also minimized the chance of avalanching snow fields from the steep walls above the gorge.

From the little village of Leevining on February 15, we found no snow for three miles up the Tioga road. Then the snow began, and we skied up the bottom of the canyon, beside the stream. Higher up, the road becomes so choked with snow and so icy as to be more dangerous than the gorge itself. Eight miles above Leevining we passed the hydroelectric unit called the Poole Plant, where the canyon changes from a broad and gently rising glacial valley to a narrow gorge filled in summer with great jagged talus slabs shot down from the cliffs above. In normal winters these are completely covered. The grade grows rapidly steeper toward the head wall at Ellery Lake. The snow, except immediately after a fresh fall, is blown, melted, and frozen into porcelain. It is often difficult to decide whether to use crampons and an ice ax, or to trust to the steel edges of the skis. There is a very real danger in climbing afoot, because the rock sides of the gorge consist of a series of precipices and benches, which fill up with snow to a smooth catenary bowl in winter. The snow which lies against the precipices, however, tends to melt out, while retaining a smooth but fragile snow roof at the top. There is seldom any sign to indicate the condition of the snow below the surface. A man on foot is in constant danger of breaking through into one of these deep caverns, while to a man on skis this hazard is notably less. We elected to stick to our skis, and came over the headwall to Ellery Lake four hours after passing the Poole Plant.

The ascent of Leevining Canyon constitutes the major effort in touring this region. The difficulties and dangers vary with conditions but should never be underestimated. Mr. Douglas Coe, coming in alone three weeks

after us on his way across the range to Yosemite, met a stinging head wind on his way up the gorge. It took him eight hours to reach Ellery Lake from the Poole Plant, and he was nearly exhausted and frozen when assisted by Mr. Tish, the snow watchman who lives at Ellery Lake the year around.

After lunch and a warm cup of tea with Mr. and Mrs. Tish, we skied along the mile and a half of gentle grade to Camp Tioga. Only here and there was there any sign of the road. For the most part it was completely covered and unrecognizable. The Lodge and cabins at Tioga Camp were well covered with giant drifts, but a dome or the tip of a gable indicated where they were. We secured our shovel from a tree where we had tied it up the summer before, and in short order had dug out the entrance, unlocked the door and had a fire going in the stove and snow melting for the evening meal.

Next morning it was snowing hard—the typical granulated sugar snow of the High Sierra that blots out the landscape within fifty yards and piles up in drifts and cornices with surprising speed. We were lucky in having beaten this storm to Tioga, for in the gorge the avalanches follow a snowfall like this immediately.

The storm lasted two days and nights with a roaring wind. Tioga is a turbulent region as we discovered, in contrast to the quiet of Tuolumne Meadows. Long after the actual storm is over, the air is thick with blowing snow from the crest above, piling in and drifting in the narrow ravine which holds Tioga Camp. Probably about a foot of fluffy powder was added to the packed base already there. When the storm broke there followed a series of flashingly clear days, speckless blue skies, and comfortable temperatures. We made excursions up to Saddlebag Lake and some excellent steep open slopes running down from the edge of the Dana Plateau toward camp. The cabins were so well covered by this time that Steve got a good start on the slopes above camp, took off from the edge of a drift and jumped clean over one of them.

On February 21 we closed the cabin, shouldered our packs and headed over Tioga Pass to Tuolumne Meadows. The snow was still deep and fluffy, so that we lined up in single file with one man breaking trail ten minutes in rotation. Breaking was hard work; skiing in the broken trail was downhill and effortless—except for the packs. We reached Soda Springs in the early afternoon. Earlier snows had banked their drifts against the northwest side and up over the roof. The door on the southeast side was blown nearly clear. A few minutes' shoveling and we were inside, a fire going in the stove and the shutters off the windows, letting in a flood of sunlight. There was evidence that a colony of mice had established a

prior claim, but by the time we had run out a trap line and caught eight of the pretty little brown fellows with their buff bellies, we seemed to be in sole possession.

I cannot at this point resist the temptation to enlarge on the excellence of the McCauley cabin for winter use. It was originally built by the McCauley boys in 1898, of straight lodgepole logs something over a foot in diameter. It is ideally built and equipped now for just such a party as ours. It holds four most comfortably. It can hold six with a little crowding. The chinking is perfect so that not a trace of snow or draft comes in through the sides. The insulation provided by the sturdy log walls is extraordinary. Its concrete floor warms up during the day and keeps the cabin warm all night. Water never froze overnight inside, although the outside temperature was often below zero. A single light army sleeping bag was more than ample. Its living conveniences are also perfect—thanks, I believe, to the skill and devoted work of Mr. Albert Duhme. In my judgment this cabin could well become the model for other remote touring cabins to accommodate from four to six in any future development of this sort. It stands low, and is quickly banked and camouflaged by snow, so that it presents no incongruity in a winter wilderness. In regions where there now stand hundreds of sound, straight, dead lodgepoles, it could probably be reproduced at minimum expense. Winter occupancy need leave no unsightly traces when the pack melts off in spring.

The next two weeks were divided between storms that lasted as a rule two or three days, and periods of perfect brilliance. The snow varied from fluffy dry powder to damp and somewhat heavy skiing in the afternoon, or hard supporting crust in the early half of the day. It was all good touring snow, and we planned our expeditions with reference to snow conditions and the weather.

After a week at the Meadows we made a short trip down to Lake Tenaya, where we camped four days. The weather changed as we traveled so that most of our time there it was snowing too hard for pleasant touring. We visited Snow Flat and May Lake and followed the Snow Creek Trail toward Yosemite Valley far enough to get fine glimpses of Half Dome, Clouds Rest, and the ridges and peaks south of it—when the clouds lifted. We headed back to our comfortable cabin at Soda Springs on the fourth day in a driving warm snow storm that wet us thoroughly and made waxing a real problem. It was delightful indeed to be able to change to dry clothing and sit around the warm stove as evening closed down and the wet snow turned to dry powder.

On March 7 we packed back to Tioga Camp to meet Dave and his wife,

off on a week's leave from Camp Beale. They came up the gorge without accident, although Dave nearly explored one of those hidden wells when he attempted to cross a steep snow slope near the first fall, on foot, and broke through the roof. His armful of skis stopped him from going all the way. They brought us in some much appreciated sugar, bacon, and eggs.

For two days it snowed steadily. Then came the break and a period of more than a week of cloudless sunshine such as one thinks of as peculiar to the High Sierra. On one of these days we climbed Dana on skis. Two others were spent on the north slope of White Mountain, where a smooth steep drop of fifteen hundred feet to the little lake at its foot presented possibilities in downhill speed skiing that were irresistible to the younger members of the party. Saddlebag and the Lundy basin under Mount Conness occupied another delightful day.

When their leave was up, Dave, Elizabeth, and Steve went down the gorge and out to civilization. Ric went with them to Leevining and returned that evening with mail and additional supplies. And on the next day, the three of us, Ric, Bill, and I, pushed back over the Pass to Soda Springs for the final two weeks of our trip.

Spring was clearly on its way by this time. The snow in the open meadow had sunk to three feet and was losing an inch or two each day to the brilliant sun. The Tuolumne River, up to now pretty well roofed with snow, so that it could be crossed at almost any point, was beginning to break its bonds and open up. Mid-day temperatures were often up to fifty or more in the shade. Minimum temperatures at night were often as high as twenty degrees. Corn snow was rapidly taking the place of crust or powder. The coyotes were coming into the valley, and would serenade us in the evenings with their weird and rather beautiful songs. We brought them close to camp by baiting the big rock that stands some fifty feet below the cabin, with muffins, mush, and now and then mice. They came to get the bait, too, as could be seen from the tracks. The hoary marmot, who lives in the crevices of that same rock, shook off his lethargy and came out to sun himself and try out oatmeal or cream of wheat. On March 17 we heard the first calls of the migrating bluebirds. Next day a pair of them took possession of the shovel tree, with its woodpecker hole, and drove away the chickadees. We occasionally ran on to Douglas squirrels in the woods—and filled them with frantic terror. I suppose they took us for bears as we slipped quietly along on skis. They showed no trace of their summer-time curiosity and impudence.

About March 25 the sky turned lead colored, with a big ring about the sun. We had in mind the possibility of one of those heavy March snow

storms that appear about the equinox and sometimes spill five feet or more of snow. The more interesting part of our food had gone. We could weather through a long storm—but on oatmeal and muffins or plain rice and macaroni. We packed quickly and were over the pass by noon, and in Tioga Camp. A storm was certainly arriving too. Next morning we locked up for the last time and dropped down canyon in the midst of increasing snow flurries, and the trip was over.

A number of impressions stand out as we view this expedition in retrospect. We are too close to it still to give them proper weighting.

To begin with, the trip was without an accident of any sort. There developed a few blisters at first. There was now and then a touch of sunburn. But nothing more serious. I think we were all well aware of the suffering and effort and hazard that would certainly attend the dragging out of a casualty. Just the thought of taking a toboggan and a broken leg down the gorge at any time was like a nightmare. We determined to take no risks. Each of us skied within the limits of his own ability and control. We never, I think, stepped beyond that limit consciously. We usually went together. Not always, however. When we did divide up each of us knew the itinerary of the other in a general way. In good weather a skier leaves a continuous record of his travels and he can always be found at the end of his trail. In snow storms we always traveled together.

A second impression, that came as something of a surprise, was the ease of winter travel on skis compared with foot travel in summer over the same terrain. In our round trip to Young Lake, for example—a matter of seven hours and some sixteen miles with a climb of fifteen hundred feet—we simply headed east of north from the cabin at a moderate climbing angle across Delaney Creek and Moraine Flat, and around the west end of Ragged Peak till we reached the lake. The boys took a short cut from Moraine Flat over a saddle on Ragged Peak and came swooping down a long snowfield that ran out onto the lake. You pick your immediate route by the looks of the snow and the terrain fifty to a hundred yards ahead. You pay no attention to your immediate footing. There are no snags, no rocks, no swamps or streams or brush to interfere. Afoot in summer you watch your footing every step of the way, and coming down, more critically than going up. On skis it is quite the reverse. You gauge the angle of your ascent on a traverse quite accurately so as to avoid backslip. Otherwise you can watch the scenery all the time on the way up. While coming down your decisions have to do with the next hundred yards or so, the position of trees and the slope as it affects your speed. You are entirely independent of trails and footing. For example, on our return we headed straight for the Unicorn

as a general bearing, knowing that eventually we should swoop down into the meadows near our cabin.

The sense of absolute wilderness was of course a strong impression throughout this whole area. The snow was spotless, and usually trackless. There were no jarring sounds or sights to remind us that man had already begun his reduction of this lovely region to just another automobile route through mountains. The presence of the few cabins under their winter mounds of snow somehow did not detract measurably from the sense of absolute loneliness and solitude that pervaded it all. There were no sounds of any sort as a rule. There was no suggestion of the road, except where it opened an artificial-looking lane here and there through the forest. Of trails there were none, of course. Whether you traveled by road or off it was of not the slightest consequence. It had no meaning, no reality, even if you knew it was there.

The most vivid impression, and the one which will linger longest in our memories, is that of the superlative beauty of this winter mountain scene, whatever its mood might happen to be. Up along the crest were the stimulating views of lofty summits gleaming white against the crystal blue of the sky. There were the days when the wind roared and the snow powder swirled in the potent turbulence of the storm. Down in the Meadows there was almost unbroken calm. Often when the snow banners were whipping far to leeward on Kuna Crest or Gibbs, there would be barely enough movement of air in the Meadows to incline the column of smoke from our cabin chimney to the eastward. Clear days were frequent and almost blinding in their flashing brilliance. And when it snowed, the distance softened and vanished in the silent cloud of tiny crystals that sifted down upon us. We seemed, and I think we were, in the clouds rather than below them. The stormy landscape—all whites and grays—was as lovely as in the sunlight.

Here, in this region, we are all of us agreed, is one of the choice touring areas in the Sierra. So far, it maintains its character of perfect wilderness. It stands as a sort of sanctuary. It is not inaccessible, but requires of those who would enter it a certain degree of faith, of hope, and of love. Above these perhaps, it demands a degree of familiarity, experience, and competence in the mountains and in the winter. To those devotees who desire admission strongly enough to add personal toil to the requirements already mentioned, the rewards in terms of beauty, inspiration, and peace are beyond calculation.

Sierra Packing and Wilderness Policy

By NORMAN B. LIVERMORE, JR.

YOU can roam the whole world over and probably not find a more unusual business than that of Sierra packing. Its uniqueness is due in large part to its almost complete lack of change in the last generation, whereas change and mechanization has been the byword in the turbulent outside world. This refreshing sameness in packing has been due to its being an integral part of the High Sierra wilderness, of which the very essence is complete lack of change. The Sierra packer is solely dependent upon a wilderness area.

It should first of all be noted that the term "packer" is widely used but that there are actually two quite separate classes of packer. First is the ordinary packer who works for a pack outfit, who should perhaps more accurately be described as a guide. He typically is a cowhand who likes to spend his summers hazing mules in the mountains. In this work he is employed by a man in the second category, the pack-train operator.

These owners or operators are the business unit of Sierra packing and it is they whose living is wholly dependent upon the Sierra wilderness.

Operating in the High Sierra region today, there are about 60 pack outfits, ranging in size from the smaller outfits with 20 to 30 head of stock to the larger ones with 150 or more. The operators of these outfits use over 3,000 head of horses and mules, operating from approximately twenty different regions on both sides of the Sierra between Sonora and Walker passes.

The packing business in California has gone through three major phases. In the gold-rush days there were the early commercial pack outfits, operating to mines where roads had not yet been built. Most famous of these packers to my knowledge was the redoubtable Daniel Dancer from Downieville. He is reported to have run several hundred head of pack stock in and around that thriving mining center before there was a road in. Everything from pianos to bathtubs was packed in on stout Sierra mules.

After the early mining camp days there was a long period of comparative inactivity. During this time the High Sierra was seldom visited and then only by sheepmen or cattlemen. I have had old-timers tell me that during this period they traveled as long as sixty days in the back country and would scarcely see a soul.

Sierra pack outfits as we know them today seem to have grown gradually with the increased use of the automobile. The first real spurt in the business

came just after World War I. The Sierra was still comparatively unexplored then, and in a day when things did not move quite so fast as they do now, trips in general seem to have been of longer duration.

In the past twenty years or so, there has been very little over-all change in packing, though there have of course been numerous changes in the ownership and operation of the various outfits.

At present, approximately two thirds of the outfits and stock are based on the east side of the Sierra, distributed from the Bridgeport region on the north to the Monache deer-hunting area on the south. The other third are distributed on the Sierra's west side, from Yosemite to Kernville. Over 75 per cent of these outfits belong to the High Sierra Packers' Association. This organization has been instrumental in helping improve packers' methods and equipment, in coöperating with Forest and Park Services in matters of mutual interest, and in helping packers through an organization to do all they can to preserve the High Sierra wilderness areas.

It is of considerable importance to analyze what wilderness problems, both present and future, are of particular concern to packers, and therefore should be of equal concern to present and future wilderness administrators.

First and most constant of threats is the possibility of new road construction such as now faces the San Gorgonio area. Several years ago this threat seemed to be more acute in the High Sierra area than it is at present, but the danger is nevertheless persistent. With the large population growth in the San Joaquin Valley, increasing pressure for more roads is bound to occur, and there are several danger spots packers are constantly watching.

Another increasingly difficult problem is that of obtaining feed for saddle and pack animals. From the packer's point of view, this is not entirely the problem of the diminishing wilderness area feed, which on the whole has been well regulated by public officials, but is also the difficulty of obtaining sufficient feed in the foothill areas for winter grazing. Owing to the comparatively seasonal nature of their business, practically no packers have been able to afford the investment required to supply them with year-round feed. In present days of high prices and competition with cattlemen, this is even more critical than it has been in the past. For proper wilderness use, the time may already be upon us when the total number of pack stock operating into given High Sierra wilderness districts should be limited arbitrarily. This would have the double advantage of limiting overuse in certain Sierra wilderness areas and at the same time might ease somewhat the increasing costliness of winter foothill feed.

Another serious problem not generally recognized by Sierra Club members is the acute curtailment of deer-hunting territory that resulted from

the establishment of Kings Canyon National Park. This eliminated a substantial volume of the business of several packers operating in that area and has, in my opinion and that of many others, concentrated hunting to too great an extent in areas just outside of park boundaries.

Another problem that is of increasing concern to packers is that of dirty camps in the high country. In the summer of 1946 the High Sierra Packers' Association, in coöperation with the Sierra Club, inaugurated a program for camp cleanup in certain areas, and it is hoped such a program will be continued.

A less imminent threat but one that is nevertheless worrisome to many packers is the increased prevalence of backpacking parties who do not use stock. While this is perhaps a misapprehension on the part of these packers, their concern can nevertheless be understood, since they derive no income with which to maintain their business from strictly backpacking parties.

Also less imminent, but a cloud on the horizon that steadily is looming larger, is the threat of air traffic. Although it appears unlikely that conventional airplanes can ever land and take off successfully in the rugged High Sierra terrain, this is not true of helicopters. They are already being manufactured with service ceiling up to 11,000 feet, and it seems to be but a matter of time before their altitude performance is increased and their cost decreased. In the absence of preventative wilderness administration policy the coming of the helicopter would of course be the death knell of all Sierra packing

While packers have many other problems, these are the major ones that will come up for discussion between packers and wilderness area administrators. I do not contend that Sierra packing should be an end in itself rather than a means to an end of sound wilderness use for the public benefit; nevertheless, I do feel that by the very nature of their business packers are inextricably interwoven with the future of the Sierra wilderness area. Anything that can be done consistent with sound wilderness use that will help packers to maintain their business should result in mutual benefit to both packers and wilderness.

Knapsaga

By ROBERT R. BRECKENFELD

CAN you carry twenty-five pounds in the mountains and still have fun? I was just home from the Navy and was casting about for a mountain vacation when I read this query. I read the Sierra Club trip announcement over more carefully, was reasonably convinced, and as a result, floated into Onion Valley in late July. Floated is the correct word; for ninety high-trippers and fifteen knapsackers were all sure that this particular July 20 was the wettest Sierra day on record. True, the showers that afternoon were just a warmer upper for the weather to follow, but we didn't know it yet. Several eyebrows were raised at the management, which assumes the responsibility in these matters.

The knapsackers were all but lost among the High-Trip crowds, the herds of mules and piles of foodstuffs; but worse, the four hundred pounds of food—all we had—was lost somewhere between Berkeley and Lone Pine. Happily, the all-important shipment arrived, but only after I had frantically returned to Lone Pine to assemble a complete new commissary. The rain abated and we set about sorting the supplies into the three caches to be packed in by Ike Livermore, finally finishing the job by Coleman light just before the rains came again.

With an early 10 A.M. start, we shouldered those twenty-five pounds we were supposed to have fun with—the heaviest twenty-five pounds ever—and went up the trail past Heart and Pothole lakes. At the expense of some perspiration, we climbed out of the east-side sage, traveled through the sparse pines, across the treeless nivated slopes below the pass, and finally reached the top of Kearsarge Pass about two o'clock. Pausing only long enough for a brief look at the clouds swirling around the peaks, we hurried down to our camp at Kearsarge Lake. Gone were the mules and crowds. What difference would a little rain make now that we were away from the cars, telephones, and other hindrances of modern civilization? Any difference the rain could make, it did; it was with us for the next six days.

At Kearsarge Lake we organized the commissary to the extent that the first one up in the morning must make the fire. Thereafter, even in the face of countless insults hurled by the insomniacs who invariably rose with the sun, I broke all records for sleeping.

A few hardy souls set out for University Peak, but the scree slopes near the summit discouraged all but the most hardy; later, a small party climbed Mount Rixford and traversed to Mount Gould. The ascent of

Gould was notable chiefly in that it was the first of several summits we climbed in dense fog, identifying the top only by the presence of a register.

After some discussion it had been decided to make the next camp at East Lake. That was fine but it involved less cache and more carry than most of us would have considered ideal. We found the food cache in Vidette Meadow with no trouble at all, selected what we thought would be a good menu, loaded our packs, executed a modified right shoulder arms, and started down the trail. We paused above Junction "Meadow" to admire the cascades in Bubbs Creek, the heavens meanwhile opening up again with a cascade of their own. The air was moist for the rest of the day.

At Junction Meadow we met Jules Eichorn, Norman Clyde and Joe Brower, who were leading a group of boys south along the Sierra crest. They had cheered the landscape noticeably with a large fire—ample reason not to hurry away. From Junction Meadow we and they took the branch trail leading up to East Lake, where we found a plot of ground that wasn't a puddle and immediately set about dispelling the cold and dampness with hot soup and an odd assortment of tents and ground sheets. The rain did let up enough for a relatively dry meal. I was sure that the Onion Valley night had been a complete freak—everyone knows that it never rains at night in the Sierra—nevertheless, the ensuing night reminded me all too much of the South Pacific. By morning, well daunted, we moved our sleeping bags under the protection of a large overhanging rock. Here we were safe against the most devilish storm. There was no more rain during the trip.

The fishermen did well in East Creek during our five-day stay, providing amply both for themselves and for those parasites who merely ate the fish. The culinary artists had their field day too. All manner of tasty bakery products were produced in the tiny reflector oven. The apple turnovers were the crowning achievement, superior to any commercial product.

On the first day with a ceiling higher than fifty feet Norman Clyde led a twenty-man ascent of Mount Brewer. The weather finally was as ordered —just the right amount of clouds for the photographers, comfortably cool, yet pleasantly warm. The summit made a very pleasant lunch spot, where, with legs dangling over a rock, a soft boulder for a back rest, we enjoyed a jagnificant* view of the clouds scudding over the Kaweahs and the main crest north to the Palisades.

While the rest of the party rested, fished, and washed their socks, Norman, Jules, Joe, Danny Kaplan, and I climbed Mount Ericsson next day. Our route led up a large chute between the mountain and the first Ericsson

*A typographical error—but we're letting it stand.

Crag, and thence up an ice chute to the summit ridge. On our last day at East Lake, Norman led a party of nine up Deerhorn from East Creek. Three of the party lost their ambition after the first summit and didn't make the traverse to the eastern peak.

After talking it over we decided to make the jump to Sixty Lakes Basin in one day, instead of the originally planned two. It turned out to be a long long way with a lot of uphill. Our appreciation of the lovely trail up the south side of Glen Pass was somewhat dimmed by the great distance. We were sorry to be leaving the Kings-Kern Divide area, but the region ahead looked very inviting indeed. Descending from the pass, we found a duck line leading off in the direction of Sixty Lakes Basin, a short cut which we later learned was used—not without comment—by most of the High Trip party. It was rather late by the time we found the cache. Dinner was made and eaten by flashlight. The day after was meadoweer's day. A few of the very energetic did a little fishing. Most of us were content to sit in the sun and absorb vitamin D.

Our two weeks in the Sierra seemed to be dwindling rapidly. In the time remaining a party of six climbed Mount Clarence King, not finding the right route until the descent. Two parties of four went up Fin Dome. Then we went out to Onion Valley. This time the sun was shining.

After a warm-up in the Sierra, some of us were very anxious to see the Grand Teton National Park. The first question people asked after the trip was, "How did you like the Tetons?" or "How do the Tetons compare with the Sierra?" The answer is the same for both questions. As mountain scenery the Tetons are unparalleled; climbing possibilities, I am told by experts, are much greater than in the Sierra. As a wilderness, however, the Tetons are just too small to be very satisfactory. In the one camp we had where we were completely safe from the one-day-trip tourists, we could look down into Jackson Hole and see the automobiles hurrying up and down the highway.

We arrived in Jackson Hole Sunday morning, August 18, after an all-night drive, only to find that the food, shipped a week before from San Francisco, hadn't arrived yet. Oscar Cook, one of the leaders, made his call at the Park Headquarters, and then we unloaded at String Lake and looked around for any other Sierra Club members who might have arrived. The other knapsackers drifted in steadily until Monday night when all 39 were accounted for. The food was a little more difficult; we had to question half of the local citizenry before we found the shipment of forty boxes, intact except for one missing carton of almonds.

Tuesday morning, not too early, we started out for Lake Solitude, the

more ambitious going by way of Indian Paintbrush Canyon, others going the shorter route via Cascade Canyon. The Cascade Canyon trail winds around Jenny Lake a mile or two (Leaders Oscar Cook and Jim Harkins crossed the lake by water taxi), and then follows the creek up the gently sloping canyon. We were surprised to see so many wildflowers in bloom so late in the season. Norman Clyde, who led the van up the trail, found a very pleasant campsite near the outlet of Lake Solitude—a camp equipped with practice-climbing rocks not three feet from the fireplace.

Before leaving Berkeley I had been told that a day never passed in the Tetons that it doesn't rain. After my experience with 1946 Sierra rainfall, I took the precaution of investing in an Army Mountain Tent. Just before we arrived, the Tetons had suffered through an amazingly long dry spell. Practically no rain had fallen for a month, and the park rangers were very worried about the extreme fire hazard. By the time we left the Tetons, the crisis was over.

After a one-day acclimatization period at Lake Solitude, highlighted by Howard Koch's "Glacier School" on Peterson Glacier, we moved to upper Cascade Canyon, where the climbing and bad weather began together. The next day Don Woods led a party of nine up the Grand Teton. Most of the climb was made in rain or snow. They stayed on top only long enough to take a partly frozen hand out of a glove and scratch a personalized "X" in the register. Oscar led a party of twenty through the rain up Middle Teton. It was no mean feat to get a party of that size up the long avalanche chute. The top was determined only by their finding of the register. The visibility was less than zero, along with the ceiling and, seemingly, temperature. A small group climbed South Teton.

The next day there was great activity on the Grand Teton. Norman led a party of eleven up the regular route. Don Woods led a rope of three up the Exum Route. The two parties met on the summit, and were rewarded at last by excellent weather. On the last day in Cascade Canyon, ascents were made of both South and Middle Tetons.

Cascade Canyon was also notable for Howard Parker's experiments in biscuit baking. Claiming that our food was definitely inferior to his mother's home cooking, Howard set out to remedy the situation. We had no reflector oven so he had to improvise from mammoth tin cans. The resulting biscuits lent a fine touch to dinner menu No. 3, *A*, and were surprisingly enough very tasty.

Our next camp was at Lake Taminah. Since there was no trail, there was no cache. Even so the "twenty-five pounds" had grown much lighter since the first of the season. We left the Skyline Trail at the head of Ava-

lanche Canyon and scrambled down over large talus past Snowflake Lake and around the shores of Lake Taminah to its lower end. The camp at Lake Taminah, perched at the very top of Shoshoke Falls, was one of the most beautiful and spectacular I have ever seen. We were particularly impressed, possibly because of its distance, with what we could see of the Wind River Range.

Climbing activity from Lake Taminah was slight, two parties, one successful, making attempts on Mount Wister. Other activities were more in evidence. The cheerfully shining sun brought out a mass of launderers in the morning—but they were somewhat dismayed when the usual 12:01 thundershower started pouring down. The lake also had its share of bathers, competition being keen between the sexes to see who would usurp the best bathing rock.

After our Taminah campsite almost anything would be anticlimactic; however, after picking our way down Avalanche Canyon through swamps and along moose trails, we were completely unprepared for the gigantic size of the tin-can dump which greeted us at Amphitheater Lake. It was plain that we had come too close to a road again. The stay-in-camp-and-lie-on-a-rock contingent enlisted many new members the first day. Glacier School was revived in the afternoon, this time on Teton Glacier, which had thoughtfully provided an icefall. We experimented around finding out what happened to climbers on glaciers, meanwhile manufacturing large quantities of cracked ice.

After two days at Amphitheater Lake, during which two parties climbed Teewinot and one climbed Mount Owen, we tossed coins to see who would win the excess sugar, rolled up our sleeping bags and somewhat regretfully hit the trail toward home.

We had collectively enjoyed an unprecedented Sierra Club backpacking summer—784 man-days of it. As the outing announcement promised, we had been independent of trails—although certainly not contemptuous of them. We had eaten no grass and had therefore presented no recreational-grazing problem; we had been our own packstock and had fared well enough in this year of food shortages and experimental biscuits. We had even had fun. As for the twenty-five pounds—well, it would be better to blame the men's overweight on chivalry and not to mention at all those luxury items we were carrying because we might want them. I should have to leave firm ground before I could criticize anyone else for the "personals" in his pack. It could have been twenty-five.

Willis Linn Jepson

1867–1946

By MARION RANDALL PARSONS

THE parents of Willis Linn Jepson, William Lemon and Martha Potts Jepson, crossed the plains in a covered wagon in 1857, coming from Jackson County, Missouri, and settling on virgin soil in the Vaca Valley. "A little land of hills and valleys . . . the only land I ever really knew as a lad." There "I learned to know the native plants, the Valley Oak of the valley floors, the golden bells of *Calochortus pulchellus* in Weldon Canyon, the strange corolla of the Dutchman's Pipe in the foothills . . . the flaming gold of the alkali patch at Little Oak when the sun on a May day helped glorify Tidy Tips . . . These and many more such plants gave botanical nurture."

That boyhood and that inheritance left its indelible imprint on the man. Of pioneer stock, he was in himself a survival of the early-American tradition, even in appearance suggesting the age of Lincoln or Thoreau rather than his own times. The puritan and the modern scientist, the recluse and the good companion, the woodsman's ruggedness and the courtliness of old-time universities—such contradictory elements made up the sum of him. A great gentleman, one of the nurses of his last illness said.

A great individual, moreover. I think that the quality most loved and respected by his friends was his staunch personal integrity, his inability to compromise with his own beliefs. Yet it was not a quality that always made for ease and happiness. When he left his Vaca Valley school to go to the University of California he was, by his own account, a shy, gawky country lad—by the evidence of an early photograph, an exceedingly attractive youth, radiating idealism, unworldliness, naïve enthusiasms. From his God-fearing parents he had received stern schooling in conduct and morals, but no instruction at all in the ways of the world that lay beyond Vacaville. He confessed in later life to a certain feeling of disadvantage among the more sophisticated "city" young people: spoke once of a casual encounter on a street corner that had aroused in him "the identical terror of meeting her on a campus path fifty years ago!" He was conscious of being unready with words, with the apt, easy reply, of becoming quickly physically exhausted in the confusion of many voices. And to the end of his life he was mercilessly frank in the expression of opinion—more than likely a dissident opinion. I remember passing him on Mosswood Road one spring

morning when the world to most of us looked very black. What a marvelous day, was his greeting, and mine a sour, "Except in India or the South Pacific or England, perhaps!" I was speared by a flash from those sharp eyes. "Mrs. Parsons, I do not *approve* of this war!" he said. So magnificent a rugged individualism could hardly fail to leave him stranded occasionally along the stream of the social amenities.

None the less he had great store of friendliness and warm companionability as many a life long friend can attest. It is not the scientist, "one of the greatest of American regional botanists," that we of the elder Sierra Club most readily remember, but the trail companion, the narrator of inimitable stories, the fiery orator (again somewhat in the old school of oratory), the reader of stirring verse—Kipling by campfire preference, though at quieter firesides the choice might range from the Bible to Herodotus, from Shakespeare to Lord Chesterfield or to Bret Harte. The geniality that rode him in the presence of sympathetic companions is to be read alike in happy phrases of his intimate correspondence and in the reminiscences of his friends.

One of these, Mr. Harry Dutton, himself a botanist by avocation, accompanied Dr. Jepson from 1909 to 1930 on botanizing trips that covered "every township in California." In the earlier days of their companionship desert travel at its best was not without hazard. Dr. Jepson's itineraries paid little heed to best routes or indeed to traveled routes at all. Letting air out of the tires, they would cruise about the desert byways almost at will, camping in the open, their only shelter a small pup tent devoted to the best interests of the botanical specimens rather than to protection for themselves. They took long excursions afoot to count the palms in isolated canyons, or camped for days among the Indians at Warren Hot Springs to learn the tribal names of local plants and the uses the Indians made of them.

The folk names of our native flowers were of enduring interest to Dr. Jepson. He had a project, unhappily never realized beyond a few notes, of writing a little book about them. He had himself been responsible for introducing many of the common names. Helen-Mar Wheeler says, "As a botanist he disliked the bother they caused him . . . nevertheless had to get along with the problem of common names. In introducing one he took pride in the quality. It should not utilize the name of a plant it might superficially suggest but with which it had no botanical relationship (Mountain Lilac for Ceanothus, for instance), should be from the folk, if possible, or one to which the folk would 'take.' " He found a little country girl once who called the red flowers of *Calandrinia caulescens* "Kisses." He asked

her why, and she said, confused, "You don't always *know* why, you just do!" The story he told me of his own naming of *Orthocarpus erianthus*—Johnny Tuck, he called it, after a little old hired man on his father's farm who had stood knee-deep in it once of a Sunday morning in the Sunday finery of that long ago childhood—that story revealed the intensity of his love of California's blossoming time. "Right body-weary am I to go and feel the freshness of the foothills," he writes to a friend. And we do not find it surprising to learn that he maintained a private weather bureau of his own in the person of an old prospector on the Colorado desert who was commissioned to send him instant tidings of rain on the desert and the promise of fine flowering.

Dr. Jepson's professional life centered in his beloved University of California, where he taught for forty-seven years. From it he received his various degrees, including the honorary LL. D in 1941. His books are well known to club members. His *Trees of California* and *Manual of Flowering Plants* have accompanied many of us on the trail. We know his splendid *Silva of California* and the *Flora*—the last volume of which is still unpublished. We know his devotion to causes dear to us. He was a charter member of the Sierra Club, helped found the Save-the-Redwoods League, founded the California Botanical Society, edited the botanical journal *Erythea*. The list of high honors accorded him at home and abroad is far too long to be included here. The pages of the biographical dictionaries sufficiently establish his standing in the scientific world. But his trail companions will long remember the man, a tall lean figure standing in the campfire light. "I have been asked tonight to tell a story," he says. "The story of the Narrow Pass. It runs, briefly, something like this:

"On the south coast of England there once lived a man who took his life in his hand between four planks on the ocean and fished for his bare bellyful. He was bitter poor and bitter ugly but clean of limb and stout of heart and the gulls heard him laugh when the sea met him. But in time he grew weary of that hard life and resolved to go far away from the ocean. So one day he set out on the great road which runs north into the midlands. And all his gear was this: on his back a great iron kettle; by a cord he led a donkey; in one hand he carried a staff and in the other a live chicken. Thus away from his old abode, with a fag end of an old song on his lips, he fared along. Now it chanced that he looked back whence he had come and saw far down that long road a speck, and the speck in time became a human being, and the human being a woman, and finally it was a girl that drew alongside him. And he saw that she was supple of body with a merry glint in her eye and a smile on her lips. Thus they fell into talk together and

went along with good discourse. But finally the girl said, 'Now must I leave you and go on.' 'But why leave me?' said the man. 'The way is most pleasant.' 'Ah,' said the girl, 'the narrow pass in the mountains is just ahead.' 'But why because of the narrow pass?' queried the man. Rejoined the girl, 'The pass is very narrow and the woods hang darkly over it. And should I come with you into the pass, you might overpower me and kiss me.' 'It is impossible,' said the man, 'because I have the great iron kettle on my back, and lead the donkey by a cord, with my staff in one hand and the live chicken in the other.' 'Ah, but you might,' said the girl. 'If I did,' replied the man, 'the donkey would run back to the sea and the live chicken would be lost in yonder hedge.' 'But,' said the girl, looking at him out of the tail of her eye, 'you might thrust the staff into the earth and tie the donkey to it, and lower the great iron kettle from your back to the ground and put the chicken under it. I fear you,' said the girl. And thus debating the matter, they came into the narrow pass in the mountains where the dark woods hang thickly on either side, and there the man thrust the staff into the meadow soil and tied the donkey to it, he lowered the great iron kettle from his back to the ground and put the chicken under it, and then and there overpowered the girl and kissed her as she said he would. This is the tale of the Narrow Pass."

Mules and Men

By WILLIS LINN JEPSON*

ACROSS the sun-bitten plain of the valley of the San Joaquin, heavy with heat and aromatic with tarweed, two lads might have been seen toiling slowly eastward on an August day in the year 1890. The second day on that plain a sharp change of wind tore away the veil of dust and blue haze and revealed in the sky eastward high and snowy slopes. In unison the two lads cried: "The Mountains! The Mountains!" It was the sort of spirit implicit in that cry which brought ten men together in the year 1892 to form a society of mountaineers. They met in Warren Olney's law office in the old Montgomery Block here in this city. There was no oratory; but there was discussion of organization, of ways and means, of incorporation, and the responsibilities of the seven of those present who signed the articles. There was debate on the objects of the proposed society and the language in which those objects should be expressed: in what way members should be had. Ventured one man present: "We must in some way get people to know the wonders of the High Sierra." Said Warren Olney: "We must first ourselves by exploration get knowledge of the glaciers, the snowfields, and peaks of the Sierra Nevada." Remembering the almost untrodden wilderness of vast areas fifty years ago, he went on: "We must use mules." And then, after a pause, another said thoughtfully: "We shall learn much from mules." The words were of good omen. When we as an organization took up with mules we enrolled in that company of great intellectuals who for twenty centuries have associated with mules.

Horace, sick of the clamor of Rome in the Via Sacra and unspeakably tired of the bores who waylaid him at Vesta's Temple, gets on his bobtailed mule and trots with a light heart and a free mind to Tarentum where he pens those images of delight in praise of the open air and the countryside that are immortal. Apuleius, astride his mule, wandering through the vales of Greece, bussing rustic maidens in flowery bypaths and adventuring happily at wayside inns. Le Sage with his retinue and train of mules engages in high emprise in the mountains and passes of Spain, fighting bandits and rescuing hapless maidens. John C. Frémont and Paul Fountain, American explorers a century since on the Great Plains of North America, are saved from surprise attack because the extraordinary powers of scent of mules and their absolute terror of Indians causes their

*Delivered at the Fiftieth Anniversary Dinner of the Sierra Club held at the Bohemian Club in San Francisco, November 28, 1942.

mules to give alarm. James Davis, member of a native tribe of California and nurtured in the wilderness, defender of the law against civil disorders and gentleman unafraid, discovers that the mules of his packtrain instantly seek the protection of an incense cedar tree and no other when, in the mountains, the lightning bolts play thickly all around. *He also* learns from mules!

The hard-headed common sense that prevailed on that day the Sierra Club was founded was of fair and hearty omen. Of wisdom and intelligence, of patience and fortitude, of caution and self-reliance this club has learned more from His Honor, The Mule, than from any other one element in the Sierra Nevada.

Mules and Men! Men and Mules! A man, hot and thirsty, arrives at Simpson Meadow on the Middle Fork of the Kings from Tunemah Pass and of that ice-cold water drinks his fill at once. A mule waits or drinks sparingly. A man puts at once all the food possible into his tired body. It is an hour before the mule bells begin to tinkle in the meadow. A man falls off a mountainside or cliff. A mule, endowed with a colossal appreciation of the value of his own skin, never falls off a mountainside or a cliff unless engineered thereto by man. The relative intelligence of mules and men is easily demonstrated: men voluntarily jump off the Golden Gate Bridge into the dark tidal waters far below. No mule jumps off the Golden Gate Bridge; you cannot by any possibility even push a mule off that long span across the Golden Gate.

The word mule comes from a Greek root meaning labor. The word may be taken as a symbol of the prodigious achievements of the leaders of our organization over a period of fifty years, in protecting and helping to protect those things in the California mountains we love best. No other society of the mountains has a record so proud, so prolonged, so successful. That which the leaders of the Club, during the last fifty years, have done has been done despite public inertia, often despite opposition, sometimes despite what has been called "private greed." To keep that which we now have and to add to it during the next fifty years will test far more the strength of this Club than its battles in the past. Public greed, vastly more powerful, will succeed private greed and specious pretexts will be made for the invasion and depreciation of primitive areas under the false pretense of the welfare of the mass man. We discover and place a sign on the tallest tree in the world and shortly we must place a steel barrier about its trunk to prevent its destruction by the mass man. We discover and make known a canyon of scenic beauty with Creation's dew fresh upon it, and all our arts and persuasion and power are employed to prevent spoliation by the mass

man. We must believe that the superior knowledge and trained intelligence of this Club will always or at least ultimately prevail. Our fair and high purpose ever, each year, grows stronger and more secure with the passage of time. Each year we renew our strength in the high fountains of our Sierra; each year we return to those high altars where we worship in the light of the Red Gods of the Camp Fires, where in the pass we feel free air astir to windward, where on gaining a crest the heart leaps at the crags of a hidden range, where the alpine maple bursts into leaf along its rocky stream in the July spring and the steer's-head flowers on its icy bank, where the boulders and the snow lie—where the boulders and the snow lie—drifted snow and naked boulders, drifted snow and naked boulders—there yearly we renew our vows, you and I, you and I.

Sierra Club

Founded 1892

MILLS TOWER, SAN FRANCISCO, CALIFORNIA

THE PURPOSES OF THE CLUB ARE: *To explore, enjoy, and render accessible the mountain regions of the Pacific Coast; to publish authentic information concerning them; to enlist the support and coöperation of the people and the Government in preserving the forests and other natural features of the Sierra Nevada*

JOHN MUIR, President 1892 to 1914

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Kings Canyon National Park

Landscape Planning in the South Fork Canyon

By David R. Brower

The Sierra Club is deeply interested in what happens in Kings Canyon. The club gave full support to the creation of the park, and was heartily in favor of the establishment of a wilderness national park. The wilderness clause in the original Gearhart Bill disappeared after the Sierra Club endorsement of it, but oral commitment was given to the proposition that the wilderness character would be maintained. The Sierra Club was by no means unanimous in wanting a road even as far as Copper Creek; failure by the Park Service to promise such a road, however, would have lost local and necessary San Joaquin Valley support for the Park Bill; the Club, on the other hand, would not withdraw support merely over disagreement on this point. The Club nevertheless strongly favored the original Forest Service plan for Kings Canyon development, in which all roads ended just short of the present western park boundary in the canyon floor—within twenty minutes' walk of Zumwalt Meadow. In this plan, the important part of the canyon floor was to remain wilderness. In all consideration of the development of roads and facilities, it might be said that the club stand was in effect this: that as many men as possible should see the canyon and the High Sierra region of the park, but that the development should not be keyed to the use of mass man. The difference between man and mass man is not at once apparent, but it is real indeed.

At the meeting of the Sierra Club Board of Directors held in Kings Canyon over the Labor Day week end, 1946, National Park Service plans for the development of the South Fork Canyon floor were presented which were open to serious objection in several respects. A special committee of the Board was appointed and given power to act for the Club. At the committee's instigation and upon request of the Director of the National Park Service, an analysis of plans was undertaken by Frederick Law Olmsted; his analysis was endorsed by the committee and approved by the Board of Directors of the Club.

Mr. Olmsted brought a unique ability to the problem: he is an outstanding landscape architect—son of "the father of landscape architecture," a collaborator with the National Park Service, and an honorary vice-president of the Sierra Club. His report, published in full below, embodies more than the proper approach to Kings Canyon development; in its detail may be perceived the important elements of a wise philosophy of national park land use.

Particular attention is invited to his concluding arguments about what may seem to be a minor matter—the location of the main pack station. Careful study should demonstrate that this question is basic. Stated in other words, the question might well be this: Is a development to be designed for easy administration, or the greatest scenic benefit to the visitor?

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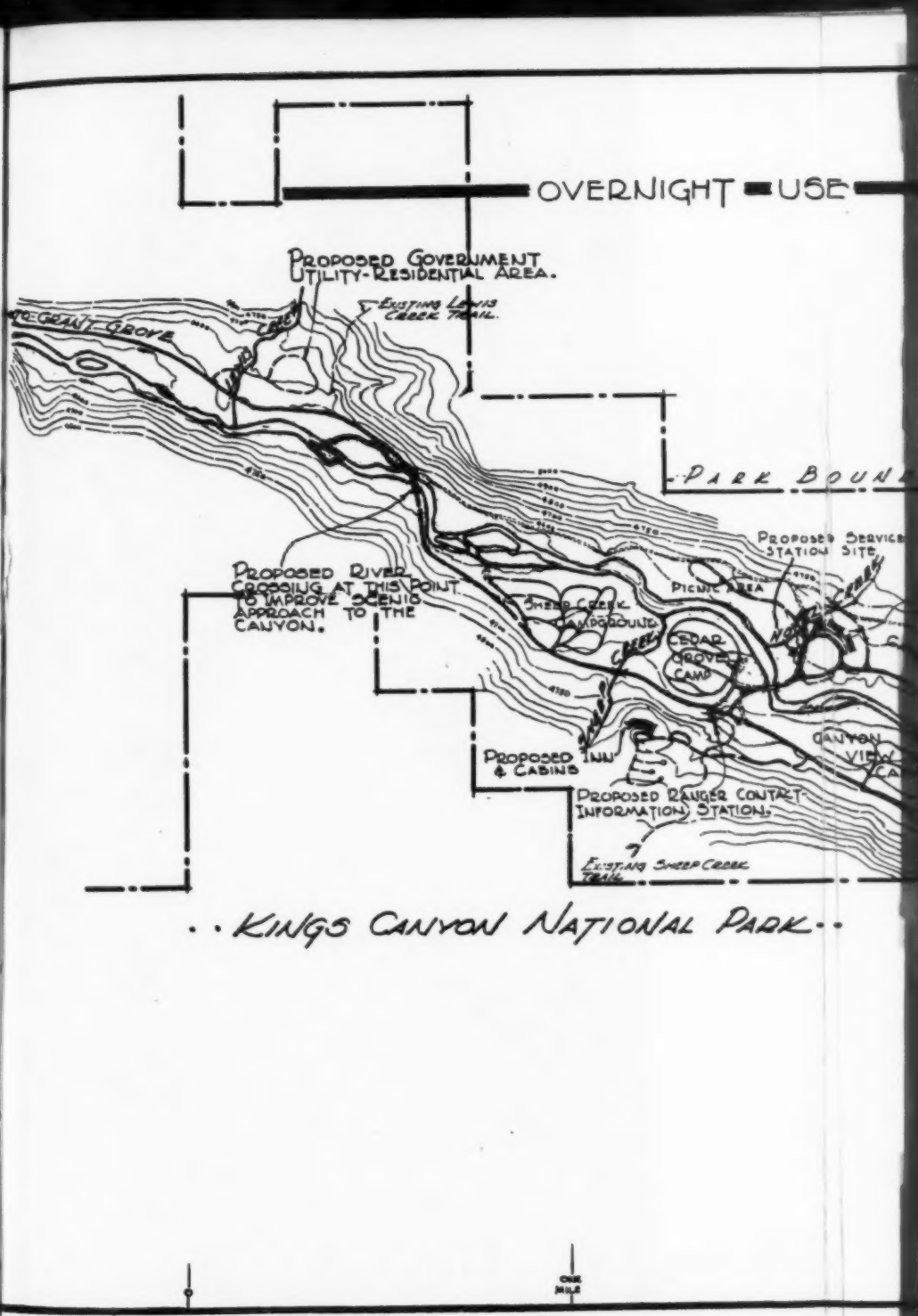
A Report on Kings Canyon Development Plans

By Frederick Law Olmsted

Introduction

After a conference on Kings Canyon in the San Francisco Regional Office, with a Committee of the Sierra Club and members of the Regional Staff, I reviewed the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SHEEP CREEK CAMPGROUND
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PROPOSED INN & CABINS
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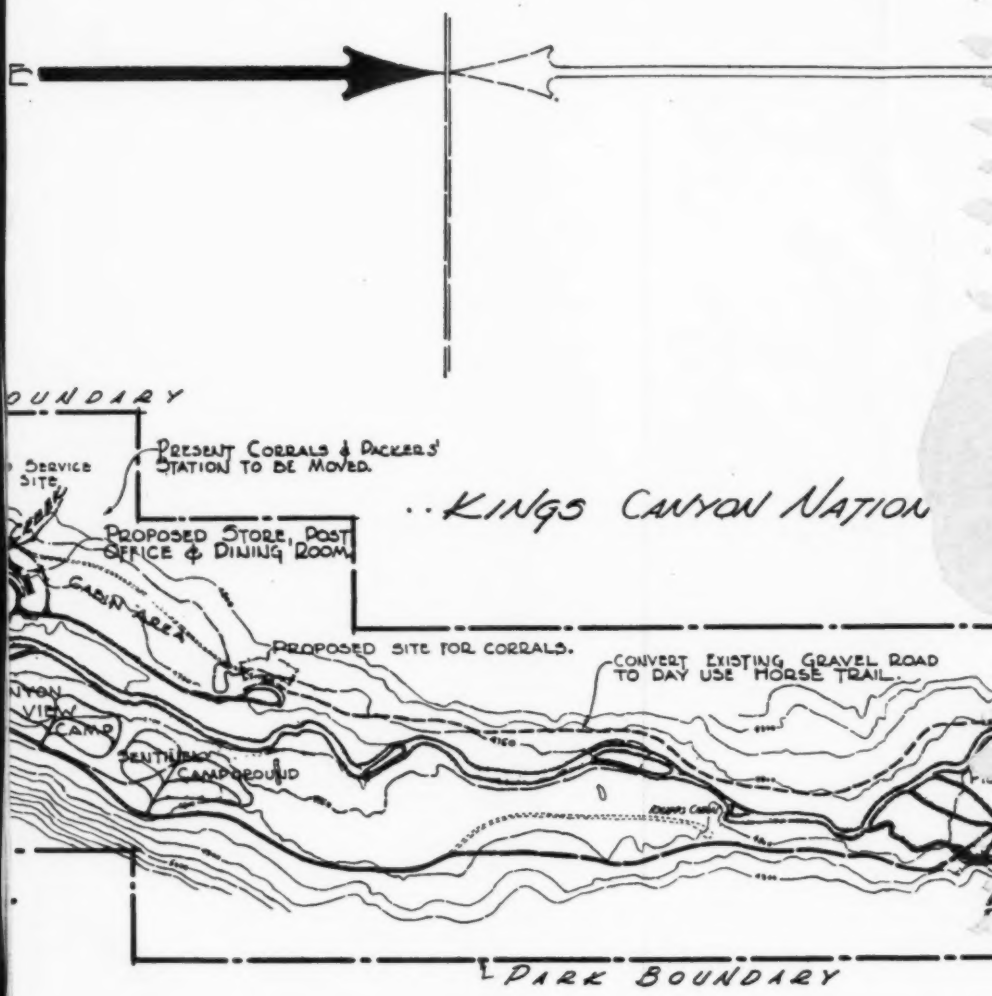
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Canyon View Camp
Sentinel Campground
Park Boundary
Two Miles
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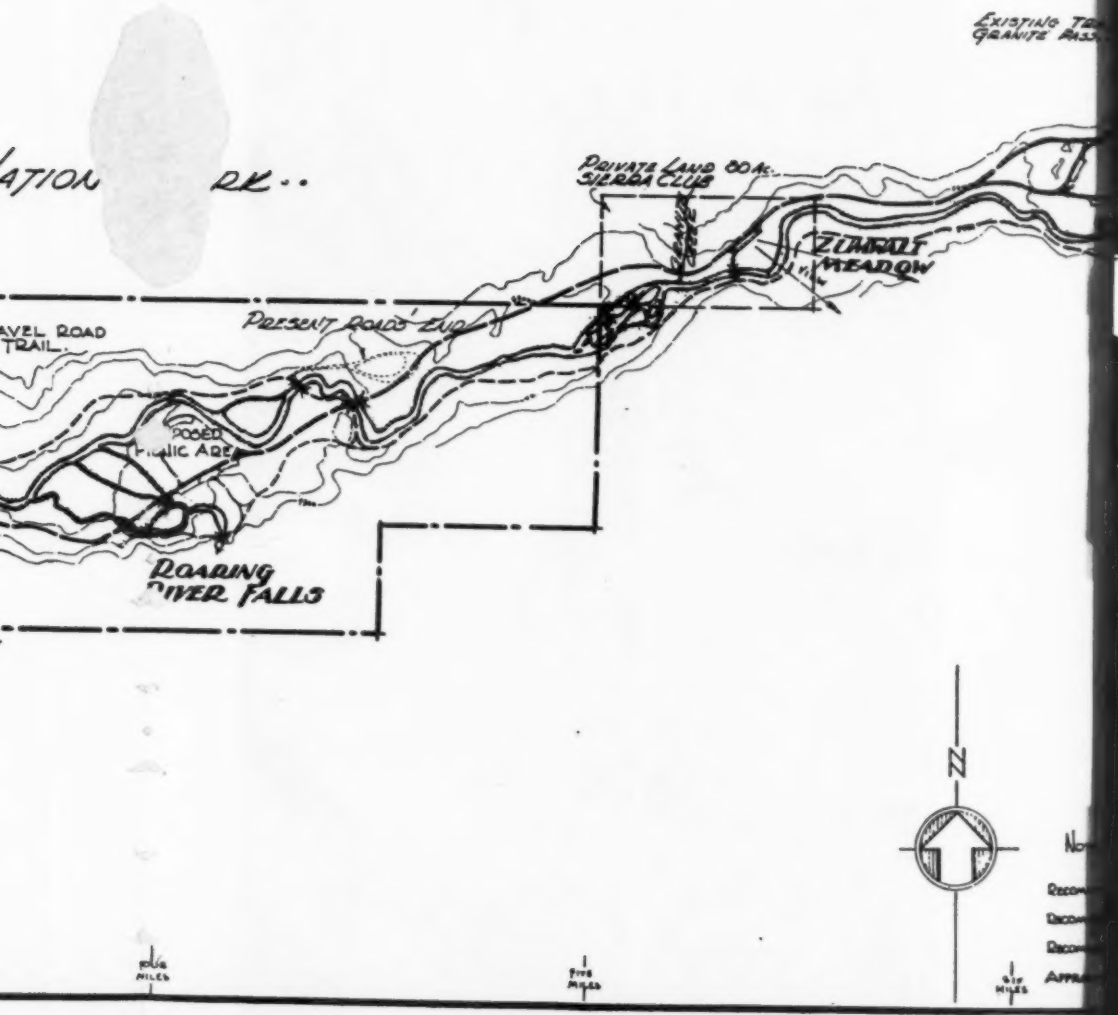
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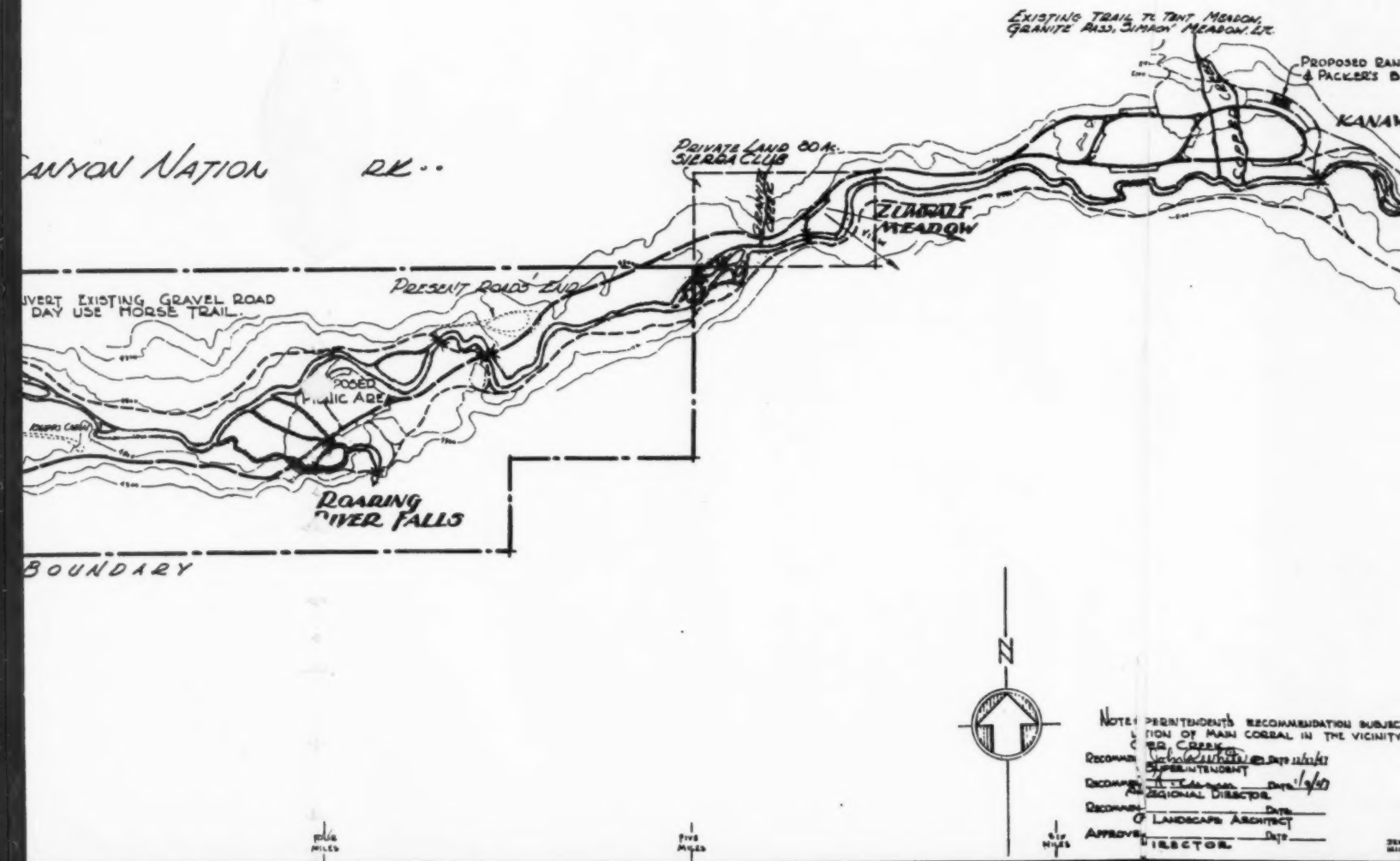
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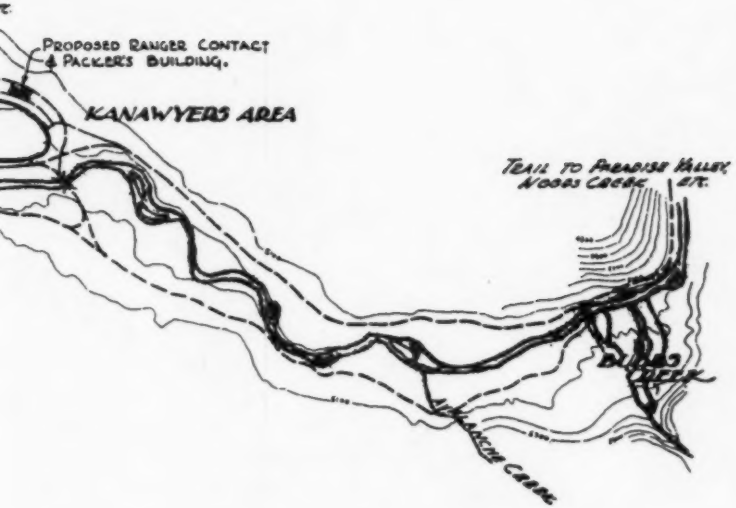


ECOMMENDATION SUBJECT TO
ORRAL IN THE VICINITY OF

U.S. DEPARTMENT OF THE INTERIOR - NATIONAL PARK SERVICE

PRELIMINARY

KINGS RIVER CANYON

PART OF THE MASTER PLAN FOR

SEQUOIA - KINGS CANYON NATIONAL PARKS

SCALE

DRAWN BY BRANCH OF PLANS AND DESIGN

DELIL- V.J.W. CHECKED - S.M.

DATA AS OF JAN. 1947 Dwg. No. SK 2001

problems on the ground with Mr. Hill and Mr. Westley of that staff on September 18, traversing by car practically all roads in the Canyon now accessible to cars and inspecting on foot to the north side from the present road-end to about three-quarters of a mile above Kanawyers and on the south side of the river on foot from about one-half mile above Roaring River down to the present road-end on the south side, and briefly discussed some of the problems with Col. White in the evening.

Certain features of all the General Plan studies shown to me by Mr. Hill, and certain principles to govern details in the working out of any General Plan, seem to me indisputably sound, viz.:

(1) Overnight accommodations for visitors and employees, together with associated developments such as store, post office, and incidental utilities, should be concentrated in the lower part of the Canyon centering in and near the Cedar Grove region; extending ultimately on the south side of the river (in the form of camp grounds) as far east, if necessary, as do the flattish areas along the existing road on that side of the river (less than two miles eastward from Cedar Grove Camp Ground as now developed) and *no farther;* and extending on the north side of the river not more than about three-fourths of a mile east of the existing Cedar Grove bridge.

There appears to be general agreement, in principle, on concentrating such developments in this area, and on limiting the total ultimate capacity of overnight accommodations accordingly (subject to some question as to how far the camp grounds should ultimately extend within those limits on the south side of the river, and subject to some questions that are discussed below concerning the location, extent and character of facilities for packers' outfits *beyond* those limits, in the vicinity of Copper Creek). But the principle involved is so important that an attempt to state it is desirable at this point.

THE PRINCIPAL

The portion of the Canyon extending eastward from the Cedar Grove area (approximately as above limited) to a little beyond Kanawyers is where the most distinctive and inspiring canyon scenery, the most impressive views of the enclosing cliffs and mountains, are to be found. It is, and always will be, rightly, the most famous part of it. The prime duty of the Park Service as custodian of this unique area is to make it possible for the great numbers of people who will be drawn here by its fame to see and appreciate, under the most favorable conditions that are humanly possible, those natural characteristics of this part of the Canyon on which its fame depends and which can be seen only here; and to do so without serious and progressive deterioration of those conditions for later comers. The roads, vehicles, trails and other artificial features that must be introduced upon the floor of this part of the Canyon solely for this prime purpose, and the incidental alterations of natural conditions on the floor, will be regrettably numerous and will to some degree distract attention from the great things even if designed skillfully to be as unobtrusive as possible. The floor of the Canyon is of very limited width and the tree growth on this critically important part of it is in general relatively sparse and open—and must always remain so to enable visitors to see and appreciate the cliff scenery at all adequately—making it peculiarly difficult to conceal or obscure buildings or other extensive artificial developments without choking the foregrounds of those inspiring views. It is therefore exceptionally important not to introduce into this most precious part of the Canyon floor anything in the way of buildings and related artificial developments

that can possibly be avoided, in addition to those which are essential for, and well designed to accomplish, the specific controlling purpose of *exhibiting the great natural scenery of this part of the Canyon effectively* to the large numbers of people who will come here expressly to enjoy what is obtainable nowhere else.

The distances within this special section of the Canyon are not so large, even for people afoot or on horseback, to say nothing of the majority who will rely largely on cars for locomotion, that keeping it unencumbered by housing and tenting facilities and all that goes with them is no more inconvenient or unreasonable for those who can sleep in the Cedar Grove area than it is to restrain the citizens of San Francisco from messing up Golden Gate Park with tents and cabins and accompanying utilities. Nor are the day-trip travel distances from other camp and cabin resorts in the mountains outside of Kings Canyon so great as to justify expanding overnight accommodations in the Canyon beyond the comfortable capacity of the Cedar Grove area at the price of impairing the impressiveness of the best part of the Canyon for the great majority who will want to see it at its best during the hours they use for sight-seeing there on any given day, wherever they sleep.

(2) The general plan for routing the main automobile road, as far east as the vicinity of Copper Creek, as shown on the "Basic Development Plan" study of August 10, 1946, "KC-2102," seems to me well conceived and decidedly better than the scheme under consideration last year, which approached Cedar Grove on the north side of the river by the existing road, and east of that point contemplated a large loop with one branch on each side of the river. The advantages of the new scheme are:

(a) It approaches the Cedar Grove camping area and the headquarters of the overnight accommodations more directly and by a pleasant route (the alternative "Line A" probably preferable unless detailed sections show it to involve excessive scarring on the steep sidehill east of the first river crossing), and it leads those who want to continue past the Cedar Grove developments, without passing through them, by a route *above* them and from which these artificial developments can be screened by low planting not obstructive to up-canyon views from the road, to a relatively high location on the south side of the river where the curve of the canyon offers the most impressive first views of the great cliffs beyond—far more inspiring for the great majority who will receive their first impressions as they drive into the best part of the canyon in cars, than if they were to continue on the north side of the river beyond Cedar Grove as they would be led to do under the former plan on a road following approximately the line of the existing temporary wheel track.

(b) By ending the automobile roads on the north side of the river in the Cedar Grove region within the limits of the area assigned to overnight accommodations and associated utilities, and by routing automobiles only on the south side of the river from Cedar Grove to the proposed bridge just east of the Roaring River delta-fan, and only on the *north* side of the river from that bridge to the terminal loop, it is possible to keep one entire side of the narrow canyon floor, from the riverbank to the cliffs, in a substantially "primitive" condition for perfect enjoyment by people on foot and horseback undisturbed by motor traffic, all the way up-stream from the Cedar Grove area—on the north side for the first two and a half miles or more, and on the south side all the rest of the way up to Bubbs Creek, including the Zumwalt Meadow section. The connection between these two "primitive units" on opposite sides of the river would include foot and horse trails close to the river, which the automobile bridge would cross overhead east of Roaring River.

Because of the narrowness of the canyon floor on each side of the river, this alternating segregation of one entire side of the floor as a roadless area and the opposite side primarily for exhibiting the scenery effectively to motorists will give better results for *both* kinds of enjoyment than the former scheme with automobile roads on both sides up to the beginning of a strictly roadless area several miles up-stream from the overnight accommodations in the Cedar Grove area. And for those who can and will explore the canyon extensively on foot or horseback, generally starting from the Cedar Grove area, this longitudinal distribution of roadless areas, beginning near the overnight accommodations for visitors and continuous all the way to Bubbs Creek and beyond, makes it less critically important whether the final eastern terminus of the automobile road is a little further or a little less far upstream on its own side of the canyon floor.

(3) A general principle for governing the design of automobile circulation in the canyon, which I think of great importance, is not clearly implied in the studies made thus far, although they do not definitely contradict it and its importance is recognized by Mr. Hill and strongly emphasized by Col. White. This principle is based on the fact that, because of the prevailing high angles of views from the canyon floor to the enclosing cliffs and mountains, it is impossible to see and appreciate at all adequately the distinctive qualities of the scenery from within the closed cars with fixed tops in which the overwhelming majority will come to the canyon and circulate in it. It is also impossible to appreciate at all fully from such cars while in motion the beauty and variety of close-at-hand foregrounds of sylvan and stream-side scenery which here complement the views of the cliffs. It is therefore of peculiar importance, in planning the means of circulation for automobiles in the canyon: (a) To select in advance, in large numbers and in great variety, localities along and near the general route of the main automobile road that can be made rewarding places at which to park cars and *get out of them* for a while so as to enjoy the peculiar scenery of the canyon at its best with no confining roof overhead (some of these places having additional incidental local attractions, such as for fishing or picnics); and *then* (b) to plan in detail the main road *and* spurs and loops and parking spaces serving such selected localities, together with a system of signs and other publicity devices, in such a way as to offer every possible inducement and temptation for people to turn aside from a too-quickly finished whirl along the main road and to stop, out of the main line of traffic, at these specially rewarding places here and there all along the route. A wide distribution of such attractive parking places of small and of moderate size is the best safeguard against excessive congestion on and adjoining the main road, and will give the maximum enjoyment to the motoring public with a minimum impairment of the scenery. The main point is that these numerous relatively small and scenically rewarding stopping places should not be afterthoughts, selected subsequent to final exact location of the main road. Every possible such locality should be exactly spotted in advance, and should be taken into account in the detailed planning of the initial road system, even though it might be unwise to provide parking spaces initially at more than a minor fraction of the selected possible spots.

Moreover, it should be impressed upon the engineers of the Public Roads Administration if they are to do the detailed work of road design and construction for the Park Service, that it is *not* desirable (at least beyond the Cedar Grove area) to facilitate uninterrupted and rapid movement along the main stem by continuously "high standard alignment"; but, on the contrary, definitely desirable that, at a considerable

number of carefully selected forks, drivers should be led to hesitate, slow up and deliberately choose (with the aid of appropriate signs) which of two inviting alternatives to follow; the object being to *distribute* the travel to (or through) numerous places of interest instead of concentrating it on the one main line and at a single terminal loop (care being taken, of course, to design the junctions, at which people are thus led to hesitate and choose, in such a way that this hesitation will not involve danger of collision with cars coming in the opposite direction).

PROBLEMS OF THE COPPER CREEK REGION

The region centering in the delta-fan of Copper Creek, and extending more than half a mile westward to include the outer slopes of the big moraine, and somewhat less far eastward, to a place beyond Kanawyers where the elevated portion of the canyon floor on the north side of the river pinches out into steep slopes, is of exceptional interest and importance, scenically and otherwise, to all appreciative visitors to the Canyon, whatever means of locomotion they are impelled or inclined to use. The cliff views obtainable from the moraine locality and from much of the rather thinly timbered area between the moraine and the denser timber along the Copper Creek distributary streams, both westward views along the high cliffs of the north side and southward to the Grand Sentinel cliffs, are, to the best of my knowledge and belief, the most impressive and inspiring anywhere on the canyon floor. The views of cliffs and more distant mountains from the sparsely timbered area that embraces Kanawyers, just east of the Copper Creek dense timber, are notably different but also of outstanding interest for all visitors to the Canyon. The shady area along the streams of the Copper Creek delta-fan, bordering on and looking out upon both these areas of inspiring views, and the shady areas near the river throughout this whole region, are among the most attractive for picnics anywhere in the Canyon. The best takeoff point, and probably the only, from the floor of the Canyon for the long trail to Granite Basin and all that lies beyond, and also for trails to easily reached and greatly rewarding outlook points a little way up the northern cliffs, is at the northwestern edge of the Copper Creek delta-fan; and the logical place for a packing station (with associated road-terminal) for long trail trips eastward via Paradise Valley or Bubbs Creek is somewhere in this region, preferably in combination with or nearly adjacent to similar facilities for the Copper Creek trail to Granite Basin.

There is one very strong and cogent reason for extending automobile roads into this Copper Creek region in such a way that the great majority of visitors to the Canyon who cannot or will not exert themselves to go far on foot or on horseback will be able to go by car to, or very near, as many as practicable of the places of special interest in this region, such as have been partially indicated above. It is *not* to enable them to see and enjoy in a really satisfactory degree, while traversing the roads in their closed cars, the extraordinary scenery and other charms of this region; for the nature of that scenery makes this impossible, as previously indicated. It is to enable them to go in their cars to within their limited walking distances of the places in question, and to induce them to park their cars and get out and away from them so as to enjoy in a really high degree the peculiar values obtainable only by going to those places and being out-of-doors (and out of cars) in them; and to do this in such a way and under such limitations that the values peculiar to this region will not be reduced (by the presence of the roads and the moving and parked cars and other artificial changes in the region) both for this majority of visitors *and* for those who can and will travel

on foot or horseback considerable distances, so greatly that the net values obtained by *all* visitors to the Canyon will be substantially less than under some other practicable plan of using the natural resources of the region.

There are two important considerations, but in my opinion far less controlling considerations, to be taken into account in planning the location of roads, parking spaces and associated artificial developments in this region.

One is that reasonably convenient and satisfactory arrangements should and must be provided for transfer from cars to animal transport and *vice versa* at a place or places conveniently related to the two main sets of high-country trails, one up Copper Creek to Granite Basin and beyond, and the other past the mouth of Bubbs Creek, branching toward Paradise Valley and up Bubbs Creek, and convenient also for those who want to take day-long riding trips on the canyon floor and lower slopes. These arrangements and the conditions affecting them should not only be such that those who come to the Canyon for the express purpose of making packtrain trips can do so with reasonable satisfaction and economy, but also such that others who come just to see the Canyon from its floor but are really fit for such trips, may be stimulated to take them. Reasonably good arrangements for starting and finishing such high-country pack-animal trips, on the canyon floor and accessible by road, are essential; and the logical place for them is in the Copper Creek region convenient to the start of the Copper Creek trail. The reason I say that this consideration is far less controlling (as to the general plan of roads and related artificial developments in the Copper Creek region) than the one previously mentioned, is that those who undertake these riding trips are in general much more deeply concerned than others to avoid serious impairments of natural conditions, not only in the high country wilderness but also on the canyon floor approach to it, and are obviously able and willing to undergo much exertion and inconvenience and considerable expense for the specific purpose of enjoying country as free as it is possible to keep it from conspicuous intrusions of man-made developments. In short, their considered preference as to the Copper Creek region would be to minimize such artificial intrusions into it even at the cost of some inconvenience to themselves. This is of much practical importance, because some of the preliminary studies for the Copper Creek region involve extensive and elaborate artificial developments for packers' outfits, including dwelling houses for many employees, storage barns, and large corrals, so located in this region as greatly to impair its natural qualities, both for those using these packers' facilities and for the majority of visitors who will not use them, with no compensating advantage other than convenience and economy in serving the needs of these lovers of the wilderness.

THE BARRIER QUESTION

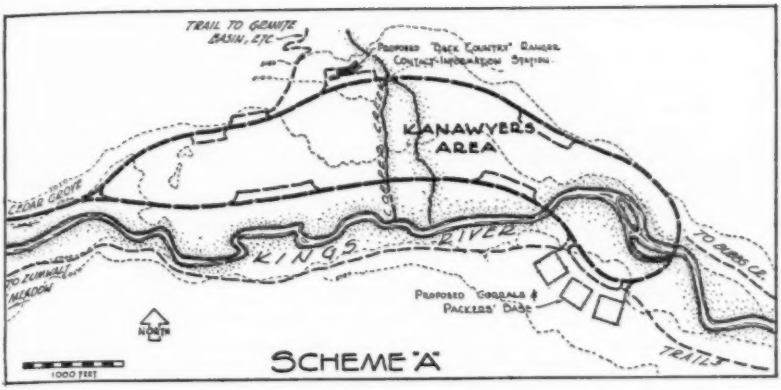
Another consideration which I think important but clearly subordinate in planning roads and associated features in the Copper Creek region is to avoid (as far as practicable without sacrifice of major values) annoyance to motorists by apparently arbitrary denial of their freedom to drive their cars where conditions make them want to go, especially an apparently arbitrary barrier to continuing on up the canyon till they come to a physical obstacle recognized by them as a reasonable place to turn back. Last year, after a hurried revisiting of the Canyon, I suggested as a device for minimizing such irritation at the eastern end of the road an easy loop, turning back, towards one of the finest cliff views, just west of the natural visual barrier of dense timber along Copper Creek, with parking spaces along the loop inviting people in

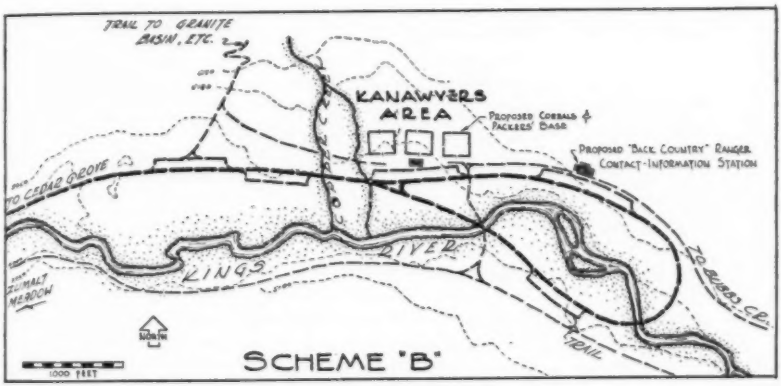
cars to get out and use the attractive shady picnic and resting places adjoining the south and east sides of the loop and to walk the short distance through the trees for enjoyment of the more open ground and views between Kanawyers and the river, unencumbered with roads and parked and moving cars. On reviewing the conditions again this year, I am doubtful whether such a loop west of the Copper Creek trees could be made to seem to most motorists a reasonable final terminus of the road system, or would in fact be a reasonable terminus. There is a great deal to be said for letting cars pass through those trees to where the people in them can see something of the lovely scenery in the Kanawyers locality, as an invitation to stop and get out, and enjoy it at leisure; provided the road and parking spaces and other developments east of the dense tree belt can be so placed and designed as not to spoil the scenery to which they give easier access. The possibilities as to this will be discussed below.

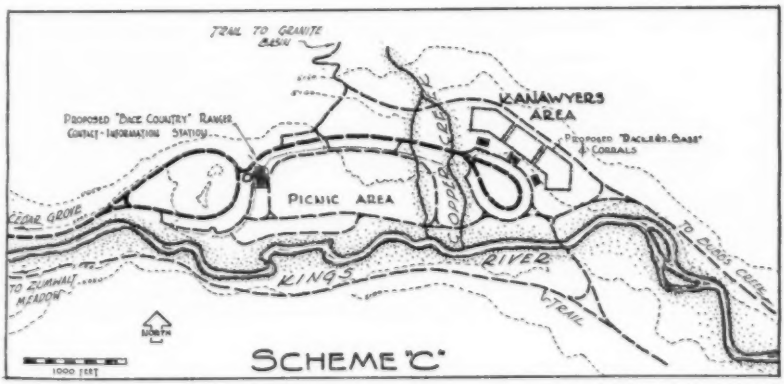
All the general plan studies for the Copper Creek region thus far made by the staff and discussed with me (and with the Sierra Club Committee in San Francisco) provide for the circulation of automobiles beyond Copper Creek, and for more or less extensive and elaborate "animal transport establishments." These plans are of three general types.

One type, which is illustrated in Scheme A, places these establishments on a bench on the south side of the river nearly half a mile southeast of Kanawyers and nearly three-quarters of a mile southeast of where the Copper Creek trail starts up the mountain, at a place where between fifteen and twenty acres of flattish ground is available. It is accessible by cars, however, only by means of a loop road extending half a mile east of Copper Creek, running directly between Kanawyers and the river, and involving two motor-traffic bridges across the river in what is now a secluded and primitively interesting part of it. There are two other very serious objections to this plan. From the standpoint of the operators the location at the northern base of a high, steep mountain makes it cold, damp, and sunless most of the time, conditions very disadvantageous for such an establishment, though very pleasant to pass through in hot weather on the foot and horse trails of what could be the roadless side of the river if the motor road did not cross over here and encumber *both* sides of the river with cars, parking spaces, and associated developments. The other objection is precisely that it would completely interrupt, by a large artificial development on the south side of the river, with motor cars, service trucks, buildings, corrals, etc., the otherwise continuous "wilderness" conditions on at least one side of the river all the way up from the Cedar Grove area to Bubbs Creek and beyond, that are made possible by the excellent revisions in the road plan further west as previously discussed. This plan should definitely be eliminated from further consideration, at least as far as concerns the part east of Copper Creek.

There is one feature of this plan, however, worthy of very favorable consideration if it can be successfully applied in a different location. It is that the easterly terminal loop of the motor road confronts, and is an integral part of, the facilities for changing from motor transport to animal transport and for starting out into the roadless wilderness beyond and above. Suitably designed in detail and topographically well placed, the corral fences and gates, the pack-animals and riding horses, the packers' sheds and equipment, and so forth, immediately beyond and largely enclosing the terminal road loop, would unmistakably tell the story that this is the place beyond which only primitive means of transport on narrow wilderness trails can properly penetrate. The extensive and complicated physical barrier of these fences and so forth, serving obvious







NATIONAL PARK SERVICE

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functional needs of the process of changing from motor transport to primitive trail transport, and the interesting activities connected with them, would seem even to motorists making no such change themselves a far less irritating and arbitrary final limit to their motoring than a loop at the same place on otherwise unoccupied ground, with a barrier having no other apparent function than to stop their further progress.

Another type of plan for the eastern road terminus and the packers' establishments, which is illustrated by Scheme B in the diagram, is open to the same objection of two motor-traffic bridges across this part of the river and motor traffic on both sides of it, but places the packers' establishments, corrals, buildings, etc., on the north side of the river and of the terminal road loop, right *in* Kanawyers (or very nearly so) and extending eastward from there; but with the terminal loop of the motor road going up the canyon beyond them instead of ending at them. There is, in my opinion, even less justification for carrying the motor road across the river and back again in the locality indicated on this study than there would be for the similar arrangement in Scheme A, which was previously discussed and disapproved. The location of the "animal transport establishment" is similar in principle to that in the study next to be discussed; but even more injurious to the enjoyment of the lovely Kanawyers locality by visitors. Such a plan should certainly be eliminated from further consideration.

A third type of plan is represented in basic idea by Scheme C, although that study as drawn is open to serious objections not necessarily inherent in the basic ideas. It combines (a) the idea of a loop road *west* of Copper Creek (with parking spaces, a "Ranger Contact Information Station" and other features intended to facilitate public enjoyment of the peculiar attractions of the locality that embraces the big moraine, the shady picnic areas along the Copper Creek delta-fan streams and near the river west of the creek, the start of the Copper Creek trails, and the exceptionally impressive cliff views west and south from that general locality), with (b) the idea of a branch motor road extending east across Copper Creek and terminating in an ultimate road loop and parking space confronting, and essentially a part of, the easternmost and final establishment of corrals, packers' sheds, etc., where motor transport must change to primitive trail-travel by animals or on foot for those who want to go further, this establishment being *east* of Kanawyers and north of the river against the base of the steep canyon-side promontory that projects almost to the river about half a mile beyond Kanawyers.

THE ENCROACHMENT OF ROADS, CORRALS, AND BUILDINGS

As drawn on that particular study, the establishment of corrals, and associated buildings and other artificial utilities, would encroach destructively into the northern part of the very beautiful and distinctive glade that slopes gently down toward the river from north of Kanawyers along the easterly side of the shady picnic area of the Copper Creek streams, and the terminal motor road loop and parking spaces would occupy and encumber almost the entire heart and center of that relatively open glade, from above the cedars planted by Kanawyer for a length of 1000 feet and a width of 500 feet, in a manner unjustifiably destructive of the great scenic values of this locality. For it is the views down and across this glade, from Kanawyers and from the edge of the denser trees along Copper Creek, toward the cliffs and more distant mountains, that have made this locality so peculiarly attractive; and there would be no benefit, either to the motorists who want to get into this attractive locality by road or to the wilderness-lovers who want to enjoy it on horseback or afoot, if its most dis-

tinctive characteristics were to be thus ruined, quite needlessly in my opinion, by the mechanisms for access to it.

(1) The encroachment into this "Kanawyers Glade" unit by the northwestern end of the string of corrals, buildings, etc., of the proposed establishment for packers' outfits and saddle horses could apparently be avoided by pushing that establishment eastward on the narrowing but still ample bench and southward toward the river, even without reducing the area assumed for that whole establishment on this study, and certainly so if that area can be reduced as discussed below.

(2) If the motor road approach to that terminal establishment, instead of crossing right through Kanawyers and looping in the middle of the glade, were to cross the lower end of the glade on a line nearly parallel with the river, and less than about 400 feet from it, injury to the great scenic values of the glade made by the road and the cars upon it would be enormously reduced, and, upon arrival at the terminal loop and parking space at the horse-wranglers' establishment on the ample bench, the motorists would be at an elevated point commanding very impressive views over the glade and toward the Grand Sentinel instead of being down *in* the glade cluttering up the foreground of the views across it from all directions. The terminal parking space would then extend from that bench northward and northwestward close against the horse-wranglers' establishments, on high ground overlooking the glade instead of in the midst of it, and the return route from it for cars might either be by the same route as the approach, across the *lower* end of the glade, or perhaps around the upper end of the glade, north of Kanawyers, commanding the southwesterly views down the glade and giving close access to the Kanawyers locality without bisecting the best part of it. If this second alternative circuit route were followed by the road, it would turn above Kanawyers, first southwestward across the Copper Creek streams about 800 feet north of the eastbound crossing, giving two points of access to the picnic areas along the streams between the road-crossings, and then westward, just below the start of the main Copper Creek trail, to the northern gap in the crest of the big moraine.

(Incidentally, I think the best westbound route past the moraine is *not* close against the steep canyon-side as shown in Scheme C, but the more direct route through the low indentation of the 5010 contour on that study [approximately followed by the road shown in Scheme A], both because the westward views are better on that route and because space ought to be left for trails between the road and the wall.)

Whether it is finally decided to extend the motor road across and beyond Copper Creek, as discussed above, or to loop it back just west of Copper Creek as suggested by me last year and strongly urged by Mr. Colby; and whether or not a loop and parking space and "Information Station," etc., is provided in the big moraine section of great cliff views, as shown on the study of Hill and Westley (Scheme C); I think it is clearly desirable to extend a road, with accompanying parking places, from the moraine locality toward Copper Creek on a route much nearer to the attractive picnic places along the river than the one which is shown in their study for convenient access to those places, and to continue this road northward along the westerly edge of the shady picnic places of the Copper Creek streams for convenient access to the latter, finally looping back westward to the moraine past the foot of the Copper Creek trail, with a parking space near that point where people can leave their cars and go up short or long trails from there on foot or horseback. It would be desirable to have facilities in that vicinity for people to get saddle horses and to load and unload pack animals, wherever the main headquarters of that sort of business is to be; but there is

not room in this locality for an establishment of that sort anywhere near as large and elaborate as is proposed for the Copper Creek region on the studies shown to me and considered desirable by Col. White—not without excessive damage to the scenic and inspirational values of this important area west of Copper Creek.

This brings me to an even more perplexing and controversial question than that of extending the motor road beyond Copper Creek.

Col. White is positively of the opinion that the entire main establishment for supplying saddle horses, pack animals, services of packers and wranglers, and all that goes with this—including corrals sufficient for the reserve supply of livestock, storage buildings for feed, equipment and other supplies, dwelling houses for a very substantial number of employees, both of concessionaires and of the Government, directly concerned with such activities—ought to be somewhere in the Copper Creek region, and *not* adjacent to Cedar Grove; mainly, I gather, for the following reasons:

(1) Those who make pack-animal trips into the back country will want to start and finish their trips in the Copper Creek region, and leave their cars and some other belongings there, properly safeguarded, while they are on their trips, and not have to take four or five miles more of trail-travel to Cedar Grove after they reach the canyon floor when they return, wearied, from their trips.

(2) Most of the people who will hire riding horses for daytime trips will, in Col. White's opinion, prefer to take horses and leave their cars in the Copper Creek region rather than near Cedar Grove where they will be spending their nights.

(3) The packers cannot afford to maintain two main establishments, and it will be much more convenient and economical for them (and at least equally so for their patrons) to take care of the minority who will want to start and finish horse-trips near Cedar Grove by having a "hitching rail," with or without a small "holding corral" and a small shelter building in that locality and by sending men and animals to it as needed from the main establishment in the Copper Creek region, than to reverse that process by having the main establishment near Cedar Grove with a secondary "packers' station" in the Copper Creek region, to which men and animals would have to be sent (in much larger numbers) and then brought back again, and at which it would be necessary to have storage facilities for patrons' cars and other belongings, spare equipment, and housing for a full-time watchman.

All that is perfectly true, assuming that Col. White is correct in assuming that only a very small percentage of the concessionaires' business will be with people staying at Cedar Grove and wanting to hire horses by the day from that point.

There would be minor, but by no means inconsiderable, advantages in the reverse arrangement of placing the main establishment near the Cedar Grove concentration of overnight accommodations for visitors and associated facilities; for example (1) the domestic conditions for the large number of wranglers, packers and other employees, both of the concessionaires and of the Government, engaged in this sort of work, and for their families, would be more satisfactory if they were not isolated from the store and post office and other community facilities and activities of the Cedar Grove area; (2) proximity to that center, and to the overnight accommodations for visitors, of the main establishment, and of the headmen in charge of it, would facilitate negotiations for the services offered and last-minute purchases at the store.

But the prime reason for keeping the main establishment in the lower part of the canyon, near the extensive village-like developments of Cedar Grove, is that this establishment, with its large, bare corrals, its fences, sheds and storage barns, work-

yards and equipment, its dwelling houses and back yards, will constitute in itself a considerable village or hacienda, apparently at least six or seven acres in extent; and that every argument for keeping the superlative natural scenery of the limited Copper Creek region free from encumberment with a village and encampments for the direct use and benefit of visitors to the Canyon applies with far greater force to the location there of a village and associated artificial utilities for the convenience of concessionaires and employees serving a minor fraction of those visitors.

If it is right, as I am sure it is, to make the general public visiting the Canyon forego the convenience of having cabins, hotel accommodations, tent-camps and associated artificial utilities in the supremely attractive Copper Creek region, because such artificial developments in that precious and limited area would greatly impair the net value derivable by the public from the Canyon, I see no justification for encumbering and artificializing that precious area with a large village-like establishment for *service* purposes of the animal-transport type, or for encumbering it with any more artificial developments for such service purposes than the minimum, in extent and conspicuousness, that can be made to perform the functions that cannot be performed elsewhere. If the policy of keeping such facilities in the Copper Creek region down to that minimum, and placing the main establishment with its reserve livestock, its bulk storage, and its dwelling houses (other than minimum watchman's quarters at the advanced base near Copper Creek) in or near the Cedar Grove artificial developments, involves appreciably greater operating costs for these service functions, as it well might, then the logical answer is that these additional operating costs ought to be met either by higher charges to those who use these services or by the Government's subsidizing the service; *not* by permanently and seriously impairing the extraordinary natural values of the Copper Creek region for all visitors to the Canyon for the sake of possibly greater convenience and probably greater economy of operation of a service to a minority, even though an important minority, of the visitors to the Canyon—especially since that minority is, in general, deeply concerned with the maintenance of "primitive" conditions to the utmost practicable degree.

In short, I recommend: (1) the careful reconsideration of the idea of keeping the main establishment for the animal-transport business outside and west of the Copper Creek region, reducing the artificial facilities for that business within that region to the least extensive and least conspicuous things that will permit reasonably good service to the public, placing these things in whole or in part so as to enclose and terminate the easternmost loop of the motor road if the latter goes beyond Copper Creek (and in that case on the high ground immediately east of the Kanawyers glade instead of encroaching into it), and/or placing them in whole or in part in a very limited area near the start of the canyon-side trails just east of Copper Creek; and (2) detailed restudy of Scheme C on the ground.

[When I was shown the diagrammatic general plan of the National Park Service (see folded map), I noticed a detail of drafting likely to confuse some readers of my report. The spot designated on that map as "Proposed Ranger Contact and Packers' Building" seems to suggest, as the central point of any group of corrals and related packers' facilities that may be needed in the region east of Copper Creek, just about the same spot as in a previous plan which I criticized in my report as crowding those facilities objectionably and needlessly close to Kanawyers and to Copper Creek. I suggested a place about 1,000 feet southeast of the one indicated on this map as the approximate center from which such corrals, etc., would string out, both eastward and northwest-

ward, on the bench against the steep canyonside, without crowding too close to Kanawyers and to the important "glade" mentioned in my report.—Frederick Law Olmsted, February 13, 1947.]

[Mr. Herbert Maier's attention was drawn to Mr. Olmsted's objection, and Mr. Maier wrote on March 24, "As to the location of the 'Ranger Contact and Packers' Station,' this was drawn in a rather diagrammatic manner on Drawing No. SK-2001 and thus may appear a little out of scale and is probably indicated further west than is intended for the final location."—ED.]

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KINGS CANYON DEVELOPMENT PLAN

[Prepared for the Sierra Club by the Region Four Office, National Park Service, San Francisco, California, February 3, 1947.]

The principal thing distinguishing Kings Canyon National Park from other national parks is that it has been set aside as wilderness and High Sierra mountain park reserved solely for trail parties and pack trips. Thus extensive tourist developments, such as large hotels, are not contemplated within the boundaries of the park. In this connection the role of the saddle, pack, and foot trail operations are emphasized in the upper reaches of the canyon, and all overnight use and service activities are concentrated in the vicinity of Cedar Grove and Lewis Creek. This factor in planning the future development for the area becomes more apparent when it is noted that South Fork of Kings Canyon is for the most part less than one-half mile in width and does not lend itself to large-scale developments of any kind. The over-development of Yosemite Valley resulted from concentration of the main public accommodation units in the upper portion of the valley and, in turn, is responsible for the existing heavily congested condition. Thus, in the Kings Canyon development, it is planned to limit the main units and concentrate them near the entrance to the park, and thereby avoid the mistake that is now lamented in Yosemite.

"Overnight Use" in the Cedar Grove area is immediately outside the park but is under the jurisdiction of the National Park Service. The development in the Cedar Grove area, as shown on the accompanying plan, would consist of:

(*a*) The principal ranger contact-information station. (*b*) Construction of the main road on the south side of the river to improve the up-canyon view which frames distant Sierra peaks within the narrow confines of the canyon walls. (*c*) Improvement of the four campgrounds to an ultimate capacity of 400 campsites or 1,500 people, all on the south side of the river. (*d*) A picnic area on the north side of the river for about 40 picnic groups. (*e*) A housekeeping cabin area which would accommodate 200 cabins (500 people). (*f*) A store, postoffice, and cafeteria. (*g*) An inn with fifty overnight cabins which could be duplex (200 people). (*h*) Corrals and packer station.

Although many of these facilities as thus planned might lie below the maximum high water level of the proposed Lewis Creek reservoir, the structures will be of simple or portable construction and will probably have served their usefulness if and when the reservoir is constructed. Owing to limited space available on the canyon floor, the developments are being held to a minimum. Consideration of the overall recreation scheme dictates a not too extensive program and ties in closely with existing and planned developments of the Park Service and Forest Service at Grant Grove, Big Meadow, Hume Lake, Boyden Cave, Huntington Lake, and like areas.

"Day Use" area in the Kings Canyon will extend from Cedar Grove to the east side of Copper Creek (Kanawyers Area). From Cedar Grove the main road, five and a half miles long, will consist of two lanes and will be constructed on the south side of the river, crossing it one-half mile above Roaring River (at the present road's end) and continuing along the north side to the flat area (Kanawyers) surrounding Copper Creek. In this area will be placed the road-loop terminus. The development of picnic area, ranger contact-information station, and packer's base are all in keeping with the "Day Use" policy of this area. In addition, a "back country" atmosphere will be emphasized by appropriate "ranch style" architecture, rail-and-post fence treatments, etc. Parking to accommodate up to 1,000 cars is anticipated.

The treatment of the road terminus at Copper Creek has been the subject of considerable study and is the principal subject of Mr. Olmsted's accompanying report which was prepared for the Director, National Park Service. In studying the road termination, it was felt that there were two concepts of planning to be considered: First was the feeling that the road should loop around through the area in such a manner that the visitor would arrive at the road's end and be directed back down the canyon on a continuous loop, scarcely realizing he had reached the road's end. Second was the concept that by planning and architectural treatment, the road terminus should tell a complete story and actually stop the visitor so that he could be invited to get out of his vehicle and visit the High Sierra country. With these two planning concepts in mind, the accompanying plans (Schemes A, B, and C) were prepared by the National Park Service. These were of a very preliminary nature at the time Mr. Olmsted made his accompanying comments.

It is not contemplated that the main road will ever be extended farther than its proposed terminus at Copper Creek. With this in mind, the road up the canyon will be located in such a manner as to afford the best vistas of the Kings River, the canyon, and the more distant High Sierra peaks. These vista points will be emphasized and developed to the maximum both for the up-canyon and down-canyon views. The road would provide a number of stopping places for overlook or short walks to such points of interest as Roaring River Falls, Zumwalt Meadows, and Granite Creek. Provision of additional picnic areas along the Kings River is contemplated.

The studies of the road system provide that the present low-standard road north of the river between Hotel Creek and present road's end would eventually be converted into a horse trail which would cross the river near present road's end and proceed up-canyon on the south side of the river.

The final location of the main corral and packers' base is being studied further. It is proposed that as an initial development small holding corrals be constructed at both Copper Creek and Cedar Grove. This would aid in the determination of the ultimate needs of each. As a small corral is planned in addition to the main packers' base, whether it be at Copper Creek or Cedar Grove, this procedure seems justified. Designs for an attractive and harmonious packers' establishment are being prepared for either location, and will be a marked contrast to the existing hodgepodge of wire and board fences, tent shanties, outsize signs, ugly feed racks, indiscriminate hay and auto storage, etc., that comprise the present operation near Hotel Creek.

The work of planning is well ahead and it is expected that the preliminary road location to Copper Creek will be surveyed next spring. No funds have been appropriated for physical improvements for the present fiscal year.

Notes and Correspondence

The Abrams Diary

By Weldon F. Heald

An interesting addition to the documented history of Yosemite Valley has recently come to light. A diary of an itinerant millwright named William Penn Abrams has been found which describes an accidental visit to the valley in 1849—two years before its effective discovery by the Mariposa Battalion.

In faded pencil on the yellowed page of an old journal is an entry under the date October 18, 1849:

> Returned to S. F. after visit to Savage property on Merced River, prospects none too good for a mill. Savage is a blasphemous fellow who has five squaws for wives for which he takes his authority from the Scriptures. While at Savage's Reamer and I saw grizzly bear tracks and went out to hunt him down getting lost in the mountains and not returning until the following evening, found our way to camp over an Indian trail that led past a valley enclosed by stupendous cliffs rising perhaps 3000 feet from their base and which gave us cause for wonder. Not far off a waterfall dropped from a cliff below three jagged peaks into the valley while farther beyond a rounded mountain stood, the valley side of which looked as though it had been sliced with a knife as one would slice a loaf of bread and which Reamer and I called the Rock of Ages.

No one could doubt that this is a description of Yosemite Valley, Bridalveil Fall, and Half Dome.

Although Abrams' newly found priority should earn for him a unique place in the chronicles of Yosemite, he cannot be credited with the actual discovery of the valley. The first white men known to have been in the locality were members of Joseph Reddeford Walker's party who crossed the Sierra Nevada from the east in October 1833. Francis Farquhar has conclusively established from the diary of Zenas Leonard, clerk of the expedition, that Walker's men looked down into Yosemite and probably Hetch Hetchy from the rims but did not descend into them (*SCB*, August, 1942). It was not until 1851, however, that the Mariposa Battalion under Major James D. Savage entered the valley, named it and introduced its wonders to the world. The importance of the Abrams diary is that hitherto there had been no evidence that any white man visited the valley or knew of its existence between 1833 and 1851.

The Abrams diary was brought to my attention recently by Mr. William C. Barry, of Glendale, California, who ran across the significant Yosemite page while tracing the genealogy of the Abrams family. Some of the volumes appear to have been lost but four are now in possession of Mrs. Frederick A. Frazier, of Los Angeles, Abrams' granddaughter. Most of the four volumes composing the diary are written in ink, although some of the pages were first penciled as if ink were not available at the time, then later traced over. The page recording the visit to Yosemite was never inked in but is obviously the same handwriting as found in the rest of the diary and the penciled notes on many of the pages.

William Penn Abrams, born in Sanbornton, New Hampshire in 1820, began a diary at the age of eighteen which he presumably kept up until his accidental death in Portland, Oregon, in 1851. The first volume tells of his leaving New Hampshire in 1839 to seek his fortune in the traditional story-book manner. With his cousin, Cyrus Colby, Abrams went to Boston and took a vessel to New York, thence up the Hudson

River to Schenectady and by the newly constructed Erie Canal to Buffalo. A stormy trip on the Great Lakes brought them to "the pleasant and thriving village of Chicago." Abrams prophesied "it is evident that at some future day, not far distant, Chicago is destined to be a great and flourishing city."

After crossing the prairies of Illinois by horse and wagon, Abrams and Colby took a steamboat down the Mississippi to New Orleans, thence to Gainesville, Georgia. There Abrams operated a lumber mill for ten years until the news of the California gold strike started him on fresh travels.

He and his friend, U. N. Reamer, joined a company which left New Orleans March 15, 1849 on the brig Predaza for Panama. Reaching Chagres in April they crossed the isthmus on foot, taking passage in May on the brig *Copiapo* for San Francisco. (The original passenger list in Abrams' handwriting is still in existence.) Ten days after their arrival in San Francisco in August Abrams and Reamer were in Stockton headed for the Stanislaus River diggings. Mining proved unprofitable, so the two men returned to Stockton, where they worked at carpentering until a Mr. Murphy sent them up the Merced River to investigate possible mill sites for the purpose of furnishing lumber to the mining camps. It was while on this expedition that Abrams and Reamer saw Yosemite Valley. Abrams, however, was not impressed with California's possibilities, for in November, 1849, he sailed for Portland, Oregon. There he erected a sawmill for a Mr. Coffin and later became a partner in the enterprise.

The diary makes interesting reading and there is little doubt that it is authentic. Abrams comments on crowded conditions in San Francisco with rooms renting for $300 a month and $250 for enough space to pitch a tent. He also records early events in Oregon Territory. The diary is a simple day-to-day journal that was not intended to be literature; nevertheless, it might well be published because of its factual record of travel in the United States a hundred years ago and its descriptions of the gold rush.

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GEORGE C. THOMPSON

Late last fall there passed from the older ranks of the Sierra Club one of its best known and loved members. Dr. George C. Thompson was born in Wake County, North Carolina, where his father was a physician and surgeon. He attended Wake Forest College, of which his grandfather was President and one of the founders. He finished his education by taking his Ph.D. from Yale. In 1904 he became Principal of the Alameda High School, a position he held for thirty-five years. In 1915 he married Miss Edna Potwin, daughter of a Contra Costa County pioneer.

Dr. Thompson joined many of the Sierra Club High Trips between 1914 and 1931, and was a very enthusiastic fisherman. In 1939 he and his wife moved from Alameda to the walnut orchard near Concord inherited by Mrs. Thompson. This soon became the scene of many pleasant picnics and lunches where Sierra Club members and friends spent many happy times. To the end of his life nothing gave Dr. Thompson greater pleasure than to offer his friends open hospitality. He was a perfect host and preserved in a very high degree the ways and mannerisms of his Southern inheritance.

JAMES RENNIE

Mountaineering Notes

The Tetons and Devils Tower 1946

By Fritz A. Lippmann

Proof that the modern mechanized school of climbing has arrived to stay was evinced by the boarding of a Chris-craft by Bob Hansen and myself on July 5, to cross the one-and-a-half-mile stretch of Jenny Lake's open water on our way to assault Summetry Spire. Before long, Bob and I were endeavoring to solve the first problem of the 1,000-foot prominent chimney on the southeast face leading up to the 10,500-foot summit. Leaving the snow tongue would have been much more comforting if we had had less ferocious looking rock to leap upon. Made safe by several pitons, we managed three overhanging chockstones, followed by a couple hundred feet of continuous climbing. We then found ourselves in the unenviable position of having to mount a hundred and twenty feet of narrow chimney interspersed with three more chockstones, each overhanging the other. The lower bit was wet and mossy, and we found one lone piton, undoubtedly placed by Fritz Wiessner on his unsuccessful attempt. Back-and-kneeing solved our situation very well; in fact, a belay was given from such an awkward position. The final chockstone resisted our direct assault with an absence of holds and piton cracks, so we bored from within by passing a rope through a convenient opening. A pull up and Bob was on top of the block, only to come scurrying back to my position when bombarded by a sudden flurry of hail from a transient thunderstorm. He tried again when the intensity of the storm seemed to slacken, and retreated when our impressions were not substantiated. On the third attempt we found ourselves in a bowl confronted by a far more intricate portion of the chimney—two hundred feet of increasing overhang. We judge this section can be done if time can be spent on it; however, as our time was slipping quickly by, we ventured out to the left a hundred feet to the corner to see if we could possibly bypass the place. Disappointingly, the high-angle southeast face offered no easy route to the summit. The lone tree on the face provided a convenient anchor for our first rappel. Establishing three other rappels took considerable time because suitable cracks for pitons were lacking.

During the next day of rest we decided not to underestimate the heights and distances of the Tetons. Condition of the snow and ice and daily afternoon thunderstorms contributed to our decision. "These are big mountains" was Fred Kelley's comment as he came back from Teewinot. The next day we packed up Garnet Canyon to Petzoldt's Cave at Timberline for an assault on the Grand Teton.

An early start was made the next morning and the upper saddle reached without incident. Above this point we wrestled with chimneys made difficult by snow and ice. A traverse to the right to Exum's ridge followed, and shortly after, at 2 P.M., we reached the summit. Buffeted by the wind, we soon retraced our steps to the upper saddle, whence we returned to base camp at Jenny Lake.

A day of inclement weather induced us to carry through our alternate objective—a close survey of Devils Tower. Permission to climb the Tower had arrived from the Park Custodian, Newell Joyner. Accompanied by Mr. and Mrs. Fred Kelley, we drove all night, as time was a prime factor in Fred's case.

Bob and Fred and I launched an attempt on the Wiessner route at noon, having arrived at 9 A.M. After a wrestle with gooseberry bushes and two high-angle chim-

neys, we peered amazed at the chimney which barred further progress. Twenty feet above our heads was the lone piton in the pitch; above it the chimney towered almost vertically for sixty feet more to the top of the tall column. Fritz Wiessner led this pitch in 1936. The feat has never been duplicated. Coaxing from Bob started me into the chimney. I found I could stay in it comfortably and that was about all, so decided to let Bob try it "mañana." By using an elevator system the next day, we arrived at our high point, and struggled ten feet farther. The route was not to our liking. Bitter at our failure, and with aching feet, Bob and I returned to the assault the next day, determined to ascend Durrance's route. A start was made at 8:30 A.M. The key spot was a sixty-five-foot high-angle back-and-knee semi-chimney. Bob led with nine pitons for safety, using the wooden planks found in the pitch also, as they could not be avoided. Three more chimneys followed, and we traversed to the right on tension to level ground. A bushwhack led to the corner from which point an easy scramble brought us to the summit. We left a register, hiked around the rim of the acre plateau, and hurriedly left the scene pursued by a cloud of flying ants. Three rappels were soon behind us, and we were at the base sipping cool drinks, thoughtfully provided by Mr. Joyner, and relayed up ahead to us as we reached the start of the unroped scramble. The climb had taken five and a half hours. Most of the time seemed to be spent resting and trying to avoid the breathless heat.

In the Tetons, the north ridge of Mount Moran, reportedly unclimbed, next caught our fancy. We spent a day packing in the eight miles toward Moran Bay on Jackson Lake, and climbing upward through dense brush to the saddle beneath the great step on the north ridge. The weather was perfect—C.A.V.U. (ceiling and visibility unlimited)—and all the mosquitoes and horseflies seemed to be out enjoying the beautiful flying weather. A hectic day for us, I assure you. Faced with 3,800 feet of rock work, we left ice axes and boots behind us the next day. Three class four pitches (we found a piton in one of them) and a great deal of scrambling, brought us to the summit, where a check in the register confirmed our suspicions: Petzoldt had climbed the ridge in 1939. We made a hasty descent with one rappel and reached camp at 7:30 P.M. A discussion arose whether to stay and rest our weary limbs or to pack down to Jenny Lake in the cool of the evening sans horseflies. Bob won the toss of the piton (his piton) so after a hurried meal we set off. Doubt as to the wisdom of the move stayed with me as we entered the labyrinth of bush in complete darkness. Stumbling in and out of pitfalls and tripping over concealed vines tried out patience until we hit the trail. Base camp was reached at 1 A.M.

Another day of rest and our interest in Symmetry Spire revived. From the boat landing we rushed up trail, talus and rock to our previous high point. After four pitches directly upward on the pleasantly exposed corner, we were in a position to traverse back into the chimney. Where the chimney forms a Y, we took the left arm to the southeast arête, which we followed to the summit. Elated by our success we left the summit at 4:30 P.M., stopped only to retrieve our cached boots and ice axes, and arrived at the boat landing at 6:30 P.M.

With our vacation time waning, we decided on Mount Owen as our final climb. Accompanied by Fred Kelley, we hastened up the Glacier Trail and established camp at Amphitheater Lake. The next morning a downward traverse bedecked with a steel cable led to the moraines of the Teton Glacier. We took the usual route with variations.

The Tetons offer climbs of all difficulties, and with scenery that is beyond description, this magnificent region is well worth revisiting. We'll be back some day.

The 14th 14,000 Footer

All Gaul is divided into three parts and California has thirteen 14,000-foot peaks. These are immutable truths learned at our mothers' knees. But is it so? About California, I mean—not Gaul.

The American Alpine Club Survey which mapped the Palisade Glacier in September cautiously announces the *fourteenth* 14,000-foot California mountain—Thunderbolt Peak. Jack Bascom, our transit man, calculates from field data that this new lofty aspirant reaches 14,090 feet. It is doubtful if we could be off as much as 100 feet. Thunderbolt is a distinct peak separated by a 500-foot gap from North Palisade, in fact a deeper gap than separates the latter from Mount Sill. It is given on U.S.G.S. maps as over 13,900 feet. The report and map of the Palisade Glacier are completed and have been sent to the editor of the *American Alpine Journal* for early publication. Anyone desiring copies, if printed later as Separates, please notify me.

Weldon F. Heald

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New Routes on Morrison and Banner

Mount Morrison rises abruptly from Convict Lake (7,600 ft.) to an elevation of 12,200 feet, the last 2,000 presenting one of the most imposing faces to be seen from Highway 395. The long-felt desire to attempt this face was fulfilled on September 7, 1946, when Harry Sutherland and I made the ascent. We left Convict Lake at 7 A.M. and finished the 3,000-foot climb to the base of the rock by 9:30. We chose a route on the east face just left of the northeast buttress, worked diagonally right over very high-angle rock (about 75°) for nearly 1,000 feet, and finally reached the buttress where its angle declined abruptly. The buttress was followed for some distance with one short excursion left around a "doubtful" corner. Near the top a prominent red chimney led into a deep couloir which was followed to the top. The climb, though long, was not very difficult (medium class 5). Approximately 18 pitons were used, about half to establish belay points. The climb required 6 hours.

We climbed Banner Peak via the southeast face on July 6. The route lay approximately in the middle of the southeast face as viewed from the vicinity of Lake Ediza. We started in the first couloir right of a deep chimney, ascended easy rock to a point where it was necessary to cross left into another couloir rising from the chimney, and then continued ascending diagonally right up a nearly vertical face to a large balcony on which a small snowfield is usually seen. Traversing right about 100 yards, we then continued straight up, reaching the top about 100 yards left of the summit block. This route was the finest climb found in two trips to the Minarets. The angle of the climb was surprisingly high considering the relative ease with which it was made. The classification given is largely class 4 with two class 5 pitches.

Charles L. Wilts

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Peaks Climbed on First Base Camp Trip

Mount Starr (12,900) was the most popular climb of the trip and was accomplished by fully half of the camp's group of sixty on either the trip into or out of the Fourth Mono Recess, the site of the Base Camp.

On July 20, 1946, the extensive mesa (Mono Mesa), visible from the Mono Pass

trail and north along the ridge from Mount Starr and east and south of Mount Huntington, with an elevation of 12,240 feet, was visited by a party composed of Lester LaVelle (leader), Ben Mason, Fritz Gerstacker, Virginia Whitacre, and Jay Broadwell. They also climbed the peak (12,200) west of it. Both were second ascents.

Mount Hopkins (12,300) was climbed by Lester LaVelle (leader), Ben Mason, Jay Broadwell, Virginia Whitacre, Carla Petersen, Arthur Bellman, Fritz Gerstacker, Hayward Severence, Grace and Allan MacRae, Juan Vincenty, Tom Howell, and Stella Lovering on July 22. On the same day Oliver Kehrlein and Edward Kaye, slightly more ambitious, made the more rugged ascent of Mount Crocker (12,448).

A first ascent of Mono Rock, the peak that dominated the camp site and rising to 12,000 feet, was made on July 23 by Lester LaVelle (leader), Jee Davis, Carl Trost, Jay Broadwell, Ben Mason, Allan MacRae, Tom Lewin, and Marshall Sommerville, and a cairn and register were left.

The highest peak on the east wall of the Fourth Recess, unnamed and with an elevation of 13,202 feet, was climbed for a first ascent, from the west on July 24 by Virginia Whitacre and Fritz Gerstacker. The route taken was up an avalanche chute and its side buttresses, which proved to be a difficult class-2 climb, made no easier by the rain encountered late in the afternoon. On the same day, following a survey of the Mills glacier, a second ascent of an unnamed peak on the west wall of the Fourth Recess, 12,351 feet, was made. The party included Arthur Bellman, Jay Broadwell, Oliver Kehrlein, Lester LaVelle, and Ralph Yearley (leader).

On July 26 Lester LaVelle and Jay Broadwell made two first ascents, one of the peak between Mount Huntington and Mount Stanford with an elevation of 12,333, and another of an unnamed peak a mile east of Mount Huntington.

R. W. YEARLEY

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SECOND BASE CAMP

Inspired by the first Base Camp's mountaineering accomplishments, the second group started off on July 29, with a traverse of Mount Morgan, 13,739 feet, and "Twelve Flags Peak," 13,450 feet, made by Lester LaVelle and Paul Hunter. The next day Mount Dade, 13,635 feet and its near-by glaciers were visited. On this trip, the glacial body (indicated on the topographical map as a glacier) lying just south of Dade, appeared no longer to qualify as a glacier. However, an active glacier was found on the north side of Mount Abbot, which is not marked on the official maps. On this climb and survey were Willard Dean, Endicott Hanson, Sam French, Oliver Kehrlein, Hugh Lowe, and Allen McCombs.

On the way into the Fourth Recess campsite, 55 members signed the register on the top of Mount Starr, 12,900 feet, among whom were several real grandmothers and grandfathers. On August 1, Lester LaVelle and Malcolm Smith traversed peak 13,202 (one mile north of Mount Abbot) from east to west for a new route up and a second ascent of the peak.

During the picnic at Golden Lake, on August 3, Mono Mesa and its adjacent Peak 12,240 were climbed by Frank Bradley, Dessie Daler, Willard Dean, Harvey Dowling, Sam French, Earl and Esther Jessee, Oliver Kehrlein, Hugh Lowe, Rodna Meiss, B. A. Olshausen, Joe Sharp, Jr., Laura and Malcolm Smith, and Jocelyn Tyler. The next day, Stan Abrams, Harold and Anne Crowe, and Charles Townsend also climbed Mono Mesa and collected botanical specimens.

On August 5, a new route was established up the northeast buttress of Peak 12,400, a quarter-mile northwest of Mount Hopkins, by Willard Dean, Sam French, Lester LaVelle (leader), George Levinrew, Joe Sharp Jr., and Malcolm Smith. The party returned via a traverse of Mount Hopkins and a scree-glissade down its east face. That same day, all the points along the summit ridge of Mount Stanford (12,826) were climbed and registers left by Peter Beito, Dessie Daler, Endicott Hanson, Oliver Kehrlein, Hugh Lowe, Allen and John McCombs.

On August 6, a new route was established up the north face (with one difficult pitch) of Mono Rock, by Lester LaVelle. In his party were Willard Dean, Fred Foulon, Paul Hunter, Dan and Joe Sharp Jr., and Homer Wellman. Mono Rock is declared to be the best viewpoint from which to see the Third and Fourth Recess and Pioneer Basin. It was climbed the next day, over the regular southerly route, by Maryline Conrey, Dessie Daler, Lester LaVelle (leader), Gladys Merritt, Florence Tangney, Louis West, and Ernst and Leona Wolff. On August 8, Mono Rock was again visited by Malcolm Smith and Charles Townsend for photographic purposes.

A final tabulation shows that on both trips, 186 members of the two Base Camps climbed one of the above peaks, of these 14 were firsts, 23 were seconds, and 18 were up new routes. All the seconds would have been firsts if Dave Brower, Norman Clyde, and Hervey Voge had not swept the map pretty clean during the summer of 1934.

OLIVER KEHRLEIN

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A RECONNAISSANCE OF CASTLE ROCK SPIRE

Bay area climbers, with accelerating zest, turned from the fall of The Arrow to new fields of challenge. For ten years tower scalers muttered in their beards about "The Spire," but, owing to their intense hatred of hiking, even to a climb, were content to view it with awe from the comfort of the north rim of Kaweah canyon, perhaps from Moro Rock, in Sequoia National Park.

This year on two midsummer trips the multiple cliffs of the Castle Rocks Ridge submitted to the appraisal of Bay Area Bergsteigers, Ted Knowles, DeWitt Allen, and Ax Nelson. The summit of the highest of the upper group of three rocks (9,150—class 3-4) was properly christened with a soup-can register by Ax Nelson. Progressing down the weirdly sculptured ridge to the northwest, Ted and Ax unslung pitons and carabiners to test all qualities of Sierra granite, from rotten to bombproof, on a little class-5 stroll to the top of "The South Guard," which was a first ascent.

Just beyond, climbing vistas expand with a massive vertical block, one or two rope-lengths above its highest shoulder, of a finger dubbed "The Little Spire." Down to the north again the ridge runs out onto a long giant fin from which one at last sights below him The Great Spire, a Munich man's dream or nightmare, which can be approached by a rough downhill scramble of several hundred feet.

This latter rock, Castle Rock Spire, is a massive granite fin, narrow but flat on top, 900 to 1,200 feet high on the north side where it falls off into Kaweah canyon, and 400 to 500 feet sheer above its notch on the south. Its vertical sides fall into steep chutes. The north and east sides present few cracks and fewer ledges ending in blank walls and overhangs near the top. The 90-degree south "prow" becomes hopelessly massive, too, toward the upper reaches. The only apparent route (?) lies on the west face, average angle 87 degrees. A long crack or slight fissure runs down through several overhangs past smooth walls from the flat top, but ends, still 150 feet up, on a

smooth face. However, a sort of horizontal crack runs over to the south some 50 to 60 feet, where its terminus might be approached by one class-5 pitch up a pinnacle lying against the prow and a sideward rappel. Six or eight long pitches of class-6 work, over at least two or three days, by two alternating teams of strong climbers, seem to be the only feasible technique for overcoming this problem. Four nylons, three or four rappels, 200–300 feet of sling rope, 50 or more pitons, 2 to 3 dozen carabiners, plus one-half-inch and three-quarter-inch drills and bolts—together with comparable amounts of "drive" and "elbow-grease," would probably be needed.

After a 6-to-8-hour drive in a good car from the San Francisco or Los Angeles areas through Visalia one approach lies up the Mineral King road on the East Fork of the Kaweah. From Atwell Mill Ranger Station hike north via signed trails through lovely Sequoia and fir forest over the ridge to Castle Rock Meadow at 8,500 feet, where there is water most of the summer (2,500-foot gain in elevation, 6 miles). An alternative approach to the Big Spire proper starts from Hospital Rock on The General's Highway and consists of a 7-mile, 5,000-foot marathon, three-quarters of the way by signed trail. Approaching close under the Castle Rocks ridge through the forest, the trail comes to two distinct flood channels. The first has water in it (last chance for the canteens) well into the summer. The route takes up the second (dry) channel toward the east side of the spire, where it becomes a somewhat tortuous declivity. "Severe class 3," says DeWitt.

Possibilities for a glorious period of from four to seven days of free-for-all ascents by several ropes of climbers presented a great appeal to this year's three explorers. The six months following June 1 offer many opportunities on *"long* week ends." With a lovely base camp at Castle Rock Meadow, the climbs could be reached walking downhill with ringside seats available to kibitzers of climbers on the Great Spire and on the Little Spire on the ridge above. The high mountain scenery of the Great Western Divide to the east and the vast hazy depths of San Joaquin valley on the west offer an enjoyable backdrop to those climbers plagued by claustrophobia in Yosemite's narrow quarters, and bored with the routine of its "standard" climbs. When shall it be, men?

ANTON NELSON

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SOME CLIMBS IN THE TETONS AND YOSEMITE

BY CHARLES WILTS

Last August, Jean and Ivan Weeks, Jim Gorin and Chuck Wilts spent a climbing vacation in the Tetons. The entire party made the easy ascent of the *Grand Teton via the Owen Route.* Then breaking up into smaller parties, Ivan and Jean, with some Chicago Mountaineers, made an attempt on *Teewinot;* Wilts with Joe Hawkes, of the Chicago Mountaineers, made an easy short class-5 ascent of the *Rock of Ages;* Gorin and Wilts made the somewhat more difficult and rather long ascent of the *N. face of Nez Perce,* and Wilts and Ivan Weeks climbed the even longer *N. ridge of the Grand Teton.* The latter two climbs, reputed to be two of the best in the park, consisted largely of class-4 climbing with only a few class-5 pitches to add interest; however, the formidable "chockstone pitch" on the N. ridge of the Grand, though short, was found to be a real exercise in class-5 climbing. Aside from this, the climb was largely an endurance feat; the party started from Amphitheater Lake at 3:30 A.M., reached the top about 3:30 P.M., and returned to the lake via the Owen Route and Garnet Canyon, stumbling into camp about 9 P.M.

Following are some Yosemite climbs during the summer of 1946:

Upper Cathedral Spire.—By Fred Becky and Chuck Wilts (probably May 25), 5th class for the second (?) time.

Washington Column: direct route.—By Chuck Wilts and Spencer Austin; 5th class, 5 hours (May 31).

"Penny Pinnacle."—Spencer Austin, Jerry Ganapole, Chuck Wilts; probably a second ascent. Should now be called twopenny pinnacle! (May 30).

Pulpit Rock.—Second ascent of the new 6th class route by Chuck Wilts and Spencer Austin (June 2).

Lost Arrow Chimney.—New high point reached by Chuck Wilts and Spencer Austin. In one day of strenuous climbing this party reached a point about 100 feet above the previous high point. Sixth class (October 5).

Royal Arches.—Chuck Wilts and Ray van Akin in 5½ hours. Descent was made by rappelling (in a snowstorm) directly from the top. One rappel exceeded 150 feet.

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Tuolumne Ski Tours

The following were some of the major side trips made from our two bases, in the course of the "Tuolumne Winter" trip (pages 89-95). They do not begin to exhaust the region. Rather they are the more obvious objectives, all within reach by skis in eight hours or less for a round trip. We were not prepared for overnight snow camping, nor were we ambitious to extend our range by that device. Snow camping would extend indefinitely the list of fine excursions that can be conveniently based on Tuolumne Meadows. It requires a degree of youth and strength and competence beyond the reach of some of us.

From Tioga.—Summit of Mount Dana; Saddlebag Lake, once in a snow storm, once in sunshine; Lundy Basin; the cirque to the southeast of Mount Conness; White Mountain, twice; Tioga mine site and its canyon.

From Soda Springs.—Lembert Dome; Dog Lake and Moraine Flat; the unnamed lake east of Cathedral Peak and the fine snow slopes that converge on it; Cathedral Lake and Pass, along the Sunrise trail; the Unicorn, Elizabeth Lake and the snow slope that runs down into it, with a smooth drop of 1,000 feet for tempo skiing; a circuit of the Unicorn, Echo, Cockscomb, and Cathedral, dropping west to the Sunrise trail and home over Cathedral Pass; Rafferty Creek to Tuolumne Pass; Glen Aulin and the White Cascade via the river, returning through the maze of domes to Tioga road where it crosses Cathedral Creek and so back to the Meadows; Young Lake.

Harold Bradley

Book Reviews

HUMAN EVENTS IN YOSEMITE. *One Hundred Years in Yosemite: The Story of a Great National Park and Its Friends. By Carl Parcher Russell. University of California Press, 1947. xviii+226 pages, 45 illustrations, map. $3.75.*

There is an extremely brief but significant statement on page 144 of Dr. Russell's new edition of *One Hundred Years in Yosemite:* "The Park Naturalist position in Yosemite National Park has been held by ... Carl P. Russell, 1923-1929." That is all the author says about his own part in the administration and interpretation of Yosemite National Park. To the reviewer's knowledge these six years were remarkable for the amount of systematic organization of information about the natural history and the human history of the park, and in this Carl Parcher Russell played a very prominent part. In 1931, before his transfer to other duties, Russell rather hastily put together a series of studies he had made on the human history of Yosemite. The resulting book contained a great deal of interesting information not readily to be found elsewhere as well as a substantial offering of entirely new material for the Yosemite record. The first edition of *One Hundred Years in Yosemite* was in some respects out of balance, as the author was well aware. Yet it has served its purpose for fifteen years and would doubtless continue to be a useful and popular book were it not for the new edition that is now available.

This new edition is, in fact, in many respects a new book. In general appearance it is greatly improved, the illustrations are fresh, and the style has been smoothed out. Above all there is a much better balance in content. Two entirely new chapters are added on the Explorers and the Interpreters. There is a new preface and a new foreword, the latter by the present Director of the National Park Service, Newton B. Drury. The chapter on Guardians of the Scene has been continued to include the administrations of superintendents Thomson, Merriam, and Kittredge, and the Chronology and the Bibliography have been amplified and extended. Sierra Club members will be gratified to find generous reference to the work of the Club, not only in climbing and exploring, but also in the field of legislation and of conservation.

FRANCIS P. FARQUHAR

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WATERS OF THE GOLDEN TROUT COUNTRY. *By Charles McDermand. G. P. Putnam's Sons, New York. 1946. xii + 162 pages; illustrations. Price, $3.*

One of the most welcome books in years to come into the hands of Sierra enthusiasts is Charles McDermand's "Waters of the Golden Trout Country." It may well be placed alongside of Starr's "Guide to the John Muir Trail" and the ever-growing "Climbers' Guide to the High Sierra," ready for prompt packing in dunnage bag, kyack, or knapsack when the time comes for hitting the trail. Although it is not in the usual sense a "guide" or a "manual," it is so filled with precise information that the reader, if he is a fisherman of slight experience, must feel that with its aid he can hardly miss a daily "limit" in any part of the High Sierra. One of the best tricks of the magician, however, is to *appear* to disclose his secrets with perfect candor. Such a magician is Mac; for he, and every really experienced fisherman, knows that there is more to the game than meets the eye. Not all readers of Mac's book will catch limits,

even if they take their stand on the very rocks shown in the pictures. For there are subtleties about fishing that defy explanation, just as there are in horsemanship, in sailing boats, or in dealing with all manner of objects, animate and inanimate. McDermand hints at these subtleties now and then and demonstrates frequently that he is a master of them.

Rock-climbers, skiers, and devotees of other sports should profit from reading this book, for it illustrates how one thoroughly absorbed in the practice of an art may at the same time be conscious of his surroundings. Nor should any snooty rock-climber or smart cross-country knapsacker cast a look of scorn at Mac and his friend Vic if they show themselves a bit awkward now and then; let him first cast a fly and land one of those "lunkers" that lurk in Lake South America at the head of the Kern. It is true that fishermen usually regard cliffs and mountains as merely so many obstructions, but how many of those who seek these "obstructions" for the sole purpose of surmounting them take a day off now and then to watch the habits of trout and learn to distinguish the Golden from the Gilbert or the Rainbow from the Eastern Brook?

Near the end of his book the author says: "Years ago I started out to fish every lake and stream where goldens dwell. I realize, with happy anticipation, that it will take all the summers I'll ever have." May there be many of these summers for Mac and for all regular piscators, and may there be new and even more richly packed editions of "Waters of the Golden Trout Country." FRANCIS P. FARQUHAR

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A GUIDE TO WESTERN PARKS. *Your Western National Parks: A Guide. By Dorr G. Yeager. Dodd, Mead & Company, New York.* 1947. 292 *pages, illustrated, maps. Price,* $3.50.

In a few pages, as few as three and as many as thirteen, Yeager describes the chief attractions of each park or monument, outlines its history when that is of interest, and makes a few remarks about roads, trails, scenic points, and accommodations. Forty of the outstanding parks and monuments are so treated, and there is a short appendix with brief descriptions of the other areas west of the Mississippi. The territorial parks, McKinley and Hawaii, are omitted as are Platt and Hot Springs, which in character do not belong to the western group.

A surprising amount of information has been fitted into these brief and informal accounts; it is clear that the selection of material has been made from personal experience. For example, the traveler is reminded to visit Zion at the full moon and to wear a coat in Carlsbad Caverns. Anyone who sets out to tour the parks will find this book a useful and pleasant companion.

There are 16 pages of photographs and four location maps. The author is Regional Naturalist of Region Four of the National Park Service. A.F.

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MOUNTAIN FIGHTERS IN REVIEW. *History of the 87th Mountain Infantry, Italy,* 1945. *By Captain George Earle. Bradford-Robinson Publishing Co., Denver, Colorado.* 1946. 215 *pages,* 128 *pictures and sketches.* Price $2.50.

The first element of the 87th Mountain Infantry Regiment was activated at Fort Lewis the day after Pearl Harbor, to become the first U. S. Army mountain organization. Its formation was a result of more than a year's effort on the part of army and

civilian groups, most active among them being the National Ski Patrol System, headed by Minot Dole; through special arrangement with the War Department, the N.S.P.S. supplied a large proportion of the volunteers, including world-famous skiers, mountaineers, rangers, and regular army men. The Sierra Club was well represented. By June, 1943, a fairly well-trained outfit left for amphibious maneuvers, and by August had landed on the beach at Adak, preparatory to the surprisingly unopposed occupation of Kiska.

In the fall of 1944, with training days at Fort Lewis, Camp Carson, and Camp Hale now behind, the men were assembled at Camp Swift, Texas, where a final reorganization took place; the 10th (the only) Mountain Division was activated, consisting of the 85th, 86th, and 87th regiments. The Division began to embark for Italy from Newport News, Virginia, in early December, and suffered its first enemy-caused casualties before all the Division closed in Italy. Captain Earle's book deals primarily with the activities of the 87th in the Italian Theater, where it arrived on January 13, having traveled more than half-way around the world since the departure from Kiska a little more than a year before. No sharper contrast could be drawn than between the stark, rain-washed, uninhabited island and this historic port, with its destitute people, overturned ships, and bombed buildings.

From Cutigliano to Belvedere, from Pietra Colora to Castel d'Aiano, the ground occupied was "to be held at all price." The pages here record the cost in the thick sprinkling of names of men killed and wounded. It was near Belvedere that an 86th unit amazed the German defenders by scaling the cliffs of Riva Ridge, exploiting the skill acquired in those long days of practice climbing in West Virginia, Fort Lewis, Camp Hale, Camp Carson, and Mount Rainier.

The fruit trees of the Apennines were in bloom as the Division prepared to spearhead the Fifth Army's spring offensive. The 87th was to make the main drive, with the 85th on the left, and the 86th on the right prepared to drive into and exploit the breakthrough. As the days passed in increasing tension, waiting men looked at each other as if trying to remember well each face. The attack in Germany was moving rapidly; the Americans were reported to be but 76 miles from Berlin. More than a few hoped there would be no drive in Italy. Finally, on April 14, the roar of bombs, artillery, and supporting heavy machine guns was convincing proof that the big drive was on. Another list of men wounded and killed was compiled. Mules became a necessity because of the blown out, narrow mountain roads. On the seventh day, the field order read: "Elements of the 10th Division will enter the Po Valley tomorrow to cut the highway west of Bologna." Much fighting prefaced the final movement onto the broad flatland. There the spirits of the weary men were greatly improved by the cheering populace so generous with their wine, onions, bread, and embraces.

Then came Lake Garda and the tragically successful pursuit in the Alps. Finally, on May 2, as the 10th was preparing to drive toward Brenner Pass, the official news broke of the capitulation of the German forces in Italy and southern Austria. The "Paisans" were jubilant and noisy as only Latin peoples can be. The infantryman was too weary, too stunned to absorb the full impact of the news. He realized that he'd made it; that now he would have a chance to get home.

A resume of occupation days, the story of the trip home, and a collection of "Tales of Mules and Men" and "Songs of the Mountain Infantry" conclude Captain Earle's account; a roster of the 87th fills the last pages, with sobering stars prefixing the names of three hundred mountain men.

Nothing short of devotion to the task could have produced so fine a unit history. With great care, the action of not only the Regiment as a whole, but also of the battalions and of each company, is traced through each important phase. To the nonparticipant there may be too much detail. But this was written for the men who fought the battles. They would not want it different. B.N.B.

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MAPS AND THEIR USES. *The Technique of the Terrain. By H. A. Musham. Reinhold Publishing Corp., New York.* 1944. 228 *pages. Price* $3.85.

Practically everyone who has spent any time in the mountains has owned or looked at topographic maps. To some people they are incomprehensible; others use them with difficulty; and there are those who are able to read them with the same facility as the comics. *The Technique of the Terrain* was written for the benefit of all those who use maps, as an aid in understanding their construction and interpretation. Since the most prolific production and intense use of maps is coincident with military endeavors, the book emphasizes military mapping problems such as field sketching, use of stride scales, following compass bearings, estimating slopes, use of coördinates, conduct of marches, and tactical topography. Portions of all these subjects, as well as the information on relief, drainage and culture, are of interest to the mountaineer. In fact, considering the number of Sierrans who get lost on every summer outing, the study of such portions would be valuable. Unfortunately, the subject matter is presented in a long-winded and often confusing manner. Some of the diagrams were obviously not checked for agreement with the text, and the author expects this reviewer who lives in a foggy region to believe that moss generally grows on the north side of a tree. Those who would study this book are warned that it is at best a supplement to actual field work with maps themselves. This fact is recognized by the author, who states in his conclusion that "a fine understanding of the lay of the land . . . is not a matter of intuition but one of observation of the terrain and detailed study of its technique." JOHN P. SCHAGEN

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STORY OF THE SKIING 10TH. *Night Climb. Frank Harper. Longmans, Green and Co., New York, London, Toronto.* 1946. 216 *pages.* $2.50.

In his acknowledgment, Mr. Harper writes of this book, "It all made a beautiful story before I started writing it." No more adequate evaluation of this volume could be made.

The story of the 10th Mountain Division's climb of Monte Belvedere is indeed a fine one, but it gains little from Mr. Harper's retelling. His is largely the story of one member of the 86th Mountain Regiment, Weir Stewart Jr., whose letters furnished much of the material. Other contemporary characters appear in this recounting and it is admittedly difficult to describe contemporaries in a strictly honest vein. Some digression could therefore be expected, but these characters have all the glamour of Hollywood stars and all their unreality, as well. General Hays is, "slim, very erect, a series of sharp angles and uncompromising lines. He was handsome, forceful. . . . He had a lot of style." George Salisbury who was a kid and a rebel, "whose tangled blonde hair was never cut, defying all orders, who wore his divisional patch upside-down on the wrong sleeve as a sign of his rebellion," sounds like a fascinating movie

character, but one wonders how long he could wear his divisional patch on the wrong sleeve in the U. S. Army. Harry Willits is a "happy, laughing Hercules" who yells, "Stonefall!" and, "Fun, isn't it?" as he plunges down the mountain in a terrible roar of tumbling rock. One wonders as he realizes that these are the names of real men, what they thought as they read these descriptions of themselves.

Obviously, a good deal of research has been done so that the proper mountaineering terms could be used, but the story still lacks the reality for which it strives. Lavish use of adjectives in situations that could be described tersely does not compensate for the awkward handling of mountaineering terms.

There are moments, however, when the story is told simply and naturally, and friends of the Division, who already have an interest in the subject, will want to read it because of the many little incidents, gleaned from letters home, which will add to their present picture of this dramatic phase of the North Italian Campaign. Readers to whom the 10th Division is a name only, will do well to wait until someone writes this "beautiful story" more convincingly so that they can get a better picture of the assault of Belvedere.

BARBARA NORRIS BEDAYN

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FIRE LOOKOUT. *Tatoosh. By Martha Hardy. The Macmillan Company, New York. 1946. 239 pages. With drawings by Glen Rounds. Price* $2.75.

For years men have been climbing to their glass towers on assorted mountaintops each summer and performing the dozen and one chores that come under the title of "Fire Lookout." It was definitely a man's world until the summer of 1943 when a manpower shortage induced the Forest Service to accept the eagerly proffered help of the ladies. Martha Hardy was one of these "lady lookouts," and in *Tatoosh*, she recounts a variety of her experiences during the nearly three months spent on an isolated mountain in the Columbia National Forest just south of Mount Rainier; experiences richly enlivened by the writer's humor and whimsical fancies. For instance there was her brush with the Brush Ape (real or imaginary, we were never told), when her courage dropped to its lowest ebb as the gun she had relied upon against this unknown terror responded with an ineffectual click. The trouble lay not with the Forest Service equipment, as she discovered several hours later, but because she had failed to cock the gun. Then there was the time she inadvertently added rock climbing to her accomplishments while on a midnight sketching expedition. The reader meets her valued circle of friends, the picturesque packers, the District Ranger and the girls from Packwood Station, whose telephone conversations and rare visits break into the loneliness of this Seattle "school marm." Included among the friends, of course, is "Impie" the ground squirrel, who by the end of the season was running in and out of the house like a pet kitten. Her descriptions of far horizons and adjacent country are so vividly portrayed that it brings a sharp nostalgia to anyone familiar with the deep forests and snowy outlines of the Northwest mountains.

Not only is the book entertaining, but the reader is also given an accurate account of some of the thought and work involved in the protection of our Evergreen gold; the teamwork and responsibility of each individual connected with the Forest Service. After experiencing with Miss Hardy the sickening helplessness of watching a forest fire out of control, and knowing the desperate fight men are making below to stop its ravaging path, and then walking with her through the desolate aftermath, you are

ready to agree with Bill Sethe, the District Ranger, when he says to her, "Know what I think little boys all over the world should get for Christmas instead of cap pistols and things like that? . . . Little tree planting outfits. Say fifty seedlings of some suitable variety tied up in a bundle on a packboard, and a little shovel. Then all the countries should celebrate an Arbor Day right after Christmas, with the grownups taking the kids out in the country to plant the trees. They wouldn't all grow of course, and they might get planted in poor spots, and the idea's foolish to start with, but the principle's sound. Kids all over the world ought to be taught by some means that it's better to make things grow than to destroy them. . . . We try to save the woods and use 'em too. Use them for lumber, grazing, water power, fisheries, recreation, but save them for our kids and theirs. It's the second part I'm more interested in. Saving something for the youngsters."

HELEN M. RUDY

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UPSTREAM AND DOWN. *By Howard T. Walden II. Illustrated by Milton C. Weiler. The Macmillan Company, New York. [No indication in the book that it is a new edition; originally published in 1938.] 367 pages. Price, $3.*

The same sort of evolution that has been going on in skiing and rock-climbing in our Western mountains is about due to appear in the practice of trout-fishing. Long an art of the utmost refinement in other parts of the world, fly-fishing has been notably crude as observed in the High Sierra, save for occasional practitioners from other waters or, more rarely, some self-taught "natural" fisherman. Trout have been easy to get in the Sierra, and still are if one goes a mile or two beyond the scent of gasoline. But from now on it is going to require more and more skill to get the big ones. So it behooves those who are interested in fishing to pay more attention to the experience of others in different parts of the world and to raise, not only the standards of their own performance, but, through encouragement, those of their associates in mountain vacations. To increase one's acquaintance with the literature of fishing, especially trout-fishing, is an important step in this process, and fortunately a very enjoyable one. I hope that before long someone will write for the *Sierra Club Bulletin* an essay of some sort on the literature of fly-fishing. McDermand's book, reviewed above, points the way. Meanwhile it would be well if our fishermen were to read Howard Walden's "Upstream and Down," as an illustration of what goes on when the ratio of fishermen to fish becomes badly disproportionate. It is a good book, but when one finds in it "gild the lily" and "of this ilk," one realizes that the author still has something to learn.

FRANCIS P. FARQUHAR

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SUBJECTIVE GUIDEBOOK. *Pacific Crest Trails. By Joseph T. Hazard. Superior Publishing Co., Seattle. 1946. 317 pages. Price $3.00.*

Joe Hazard has his own way of telling about the mountains. It may drive an editor wild, but anyone who has been in the mountains with Joe will find this book of his a characteristic expression of his enthusiasm and love of the high hills. Those fortunate enough to have experienced his leadership and companionship will never forget the exuberance of his personality, and the fun it was to be with him on a trip.

Pacific Crest Trails is a guidebook, but not a conventional one. The author takes us with him from Alaska to South America. It is easy to realize that his favorite heights are his home mountains, those of the Pacific Northwest, although his enthu-

siasm for the Canadian climbing regions, especially the Selkirks, inspired this reader to get out the map again and plan a trip. It is not too easy a book to read, from the physical standpoint. It is more like a conversation which occurs along the trail than what a well knit and well edited book should be. Anecdotes, descriptions, personal experiences and bits of history are interspersed as they happen along. Sometimes the reader gets as breathless as if he *were* conversing along a steep trail; but at the same time enjoying every bit of it. Who could help but be amused by a digression such as this? He is telling of Mount Hood, the development of skiing, and the ski-jumping contests on its slopes. "It may be well to explain why contestants of Norwegian blood win the majority of ski-jumping contests. The answer is found in Webster's ... 'Norwegian ... typical Teutons, tall blond and dolicephalic ...' which means ... that the head of the average Norwegian is streamlined from front to back and splits the air like the beak of an eagle.' ... My first two ski teachers were Thor Bisgaard and Harold L. Wold. I failed in my first tests ... I retired to the Clubhouse, added another 'a' within my name, thus spelling it *Hazaard*, went out in the snow to try again, and passed!"

If the editors had been a little more conservative in their elaborate use of many sizes of type, and eliminated a number of unnecessary exclamation points, the reading would have been just as effective, and in some places more enjoyable. The appearance of the book would have been more pleasing; as it is now, many of the pages suggest a textbook, but although it is full of information, it is far from that. Our purists, too, will object when we reach our part of the Pacific Crest, because it speaks of the "Sierra Nevada Range"[!]

But it is full of zest, and the always fascinating lure of the mountains past and present. It is interesting too, this informal and talkative book, and it certainly does what it is supposed to do—it makes the reader want to set forth on all those Pacific Crest Trails. H. T. P.

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NORTHERN ITALIAN CAMPAIGN IN PICTURES. *This was Italy. By Richard A. Rocker, Denver, Colorado.* 1946. *Limited edition of* 1,000 *copies,* 60 *contact prints with narrative.* $5.00.

According to Dick Rocker's foreword, "These are amateur photographs ... taken with a pocket camera by an infantry soldier, at odd moments when Uncle Sam was paying him to do something else. There are few 'pretty pictures' in this book ... Neither are there any so-called 'horror pictures,' no close-ups of stale and twisted torment.... Most of us are inarticulate now that we are home, and find our words inadequate to explain what it was like."

Other Sierra Club members as well as 10th Mountain Division men will find much of interest in this carefully prepared, amateur volume. Shots of the "Endless Apennines," picturesque villages that had escaped war's devastation, Belvedere, and beautiful Lake Garda are well worth a perusal. It is a surprise to find the face of club member Raffi Bedayn, with the caption, "After too long a time of too many close ones and too little sleep, a smile becomes a twisted grimace. And eyes ... can't quite laugh it off." Farther on is the portrait of Rus (Solon) Lindsey, once in the Rock-Climbing Section, who was "caught in the wrong place at the wrong time, and a grand man died."

Dick Rocker has written a brief but colorful running narrative to describe his sixty pictures. For those of us who were not in Italy with the 10th Mountain Division, it is a striking and all too sharp picture of the war in northern Italy. For the 10th Division men it indeed will serve to "freshen memories and loosen tongues about places that should be remembered, and days and deeds we ought never to forget."

B.N.B.

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MOUNTAINS IN PEACE AND IN WAR. *When Men and Mountains Meet. By H. W. Tilman. Cambridge University Press,* 1946. *232 pages, illustrated. Price* $3.50.

Those who are nostalgic for accounts of climbing as it used to be before the war, will find that nostalgia somewhat alleviated by the first part of H. W. Tilman's latest book. This half tells of several trips into the Himalaya; an attempt to climb Gori Chen in the Assam Himalaya, and experiences crossing the Zemu Gap in Sikkim. He met with both failure and success, but whatever happened, his humor and love of the mountains gave him a deep enjoyment of it all. "We had climbed a mountain and crossed a pass; been wet, cold, hungry, frightened, and withal happy." Anyone who has done any mountain climbing even in a minor way, knows just what he means.

The second half of the book deals with his experiences during the war, in Irak and Persia, and finally as a volunteer for a special service which took him to Albania and Italy. He managed to find an occasional mountain to climb for his soul's good in Irak and Persia. It was in Albania and later in Italy, where he worked with the partisans, that he lived the wild rough precarious existence for which his previous mountaineering experiences had so well fitted him. Never over-dramatized, but rather an excellent piece of understatement told with a pleasantly dry humor, it is nevertheless easy to feel the drama that was actually there.

This last part of the book is really a tribute to the partisans whom he came to know so well. As he says in the preface, there is no mountaineering in this half of the book, "but the mountains are there nevertheless. It was fitting and in accord with tradition, that those who cherished the spark of freedom and finally fanned it to a blaze, should have lived for the most part in the mountains of those mountainous countries." It is this part of the book which prompted and justified the choice of William Blake's lines from which the title is taken, "Great things are done when men and mountains meet . . ."

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